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RAILWAY AND COMMERCIAL GAZETTE.

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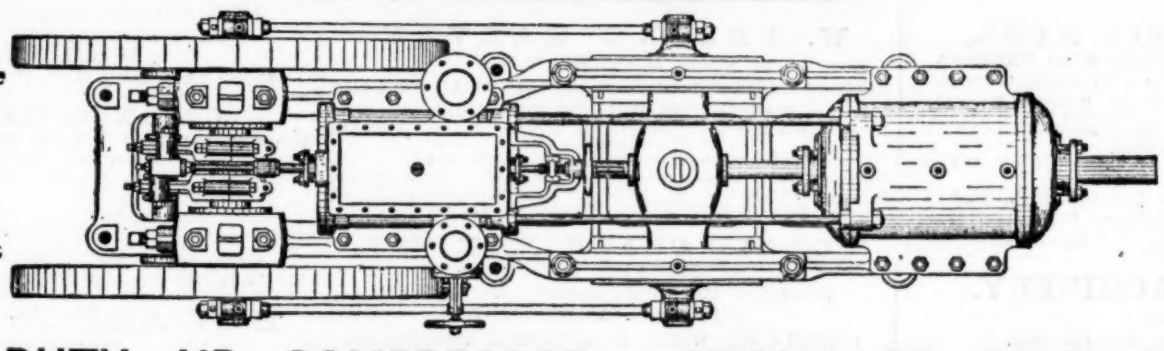

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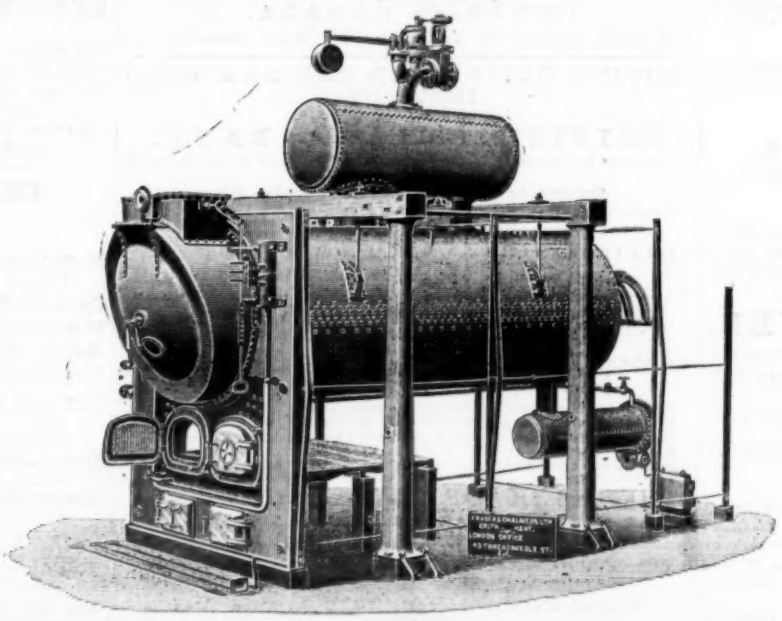

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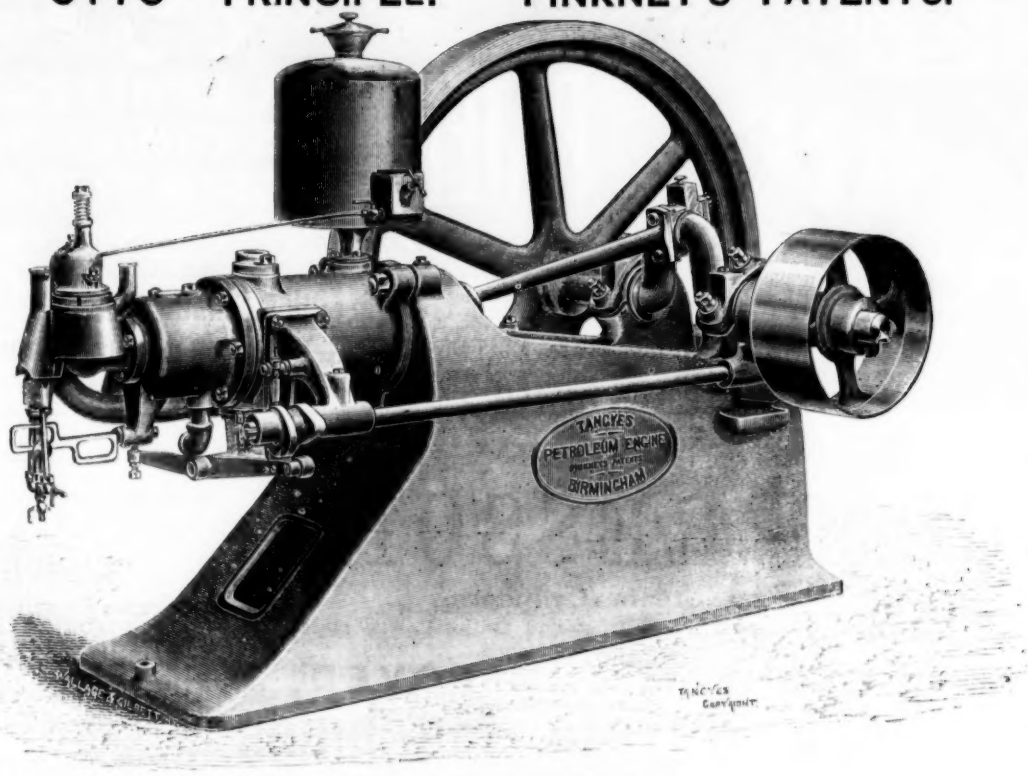

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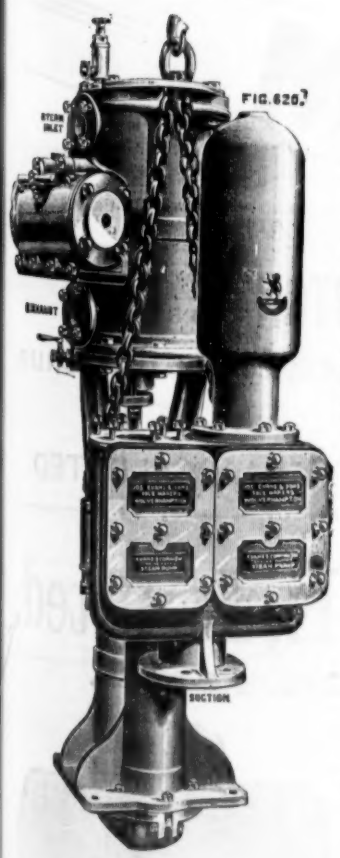
NO TAPPETS, LEVERS, OR EXTRANEOUS GEAR.

"EVANS and TONKIN'S" Patent "CORNISH" SINKING PUMPS have been used on all the recent modern sinking operations of importance, including

North's Navigation Collieries, the Blackwall Tunnel, the Barry Dock Extension, Hockley Hall Colliery, the Griff Colliery Sinkings, the Coppice Colliery, the Fishley Colliery, the Moss Hall Colliery, the North Walbottle Colliery, the West Hallam Colliery, Port Talbot Docks, Devonport Docks, and other large Sinkings, also North Wales, Rand, West African, West Australian, Victorian, South American Gold Mines, &c., &c.



"GRIFF" PATTERN "CORNISH" SINKING PUMP.

London Office
16, UNION COURT, OLD BROAD ST.
E.C.

DEPOTS:
NEWCASTLE-ON-TYNE.
GLASGOW, WAKEFIELD,
MANCHESTER,
CARDIFF, and BELFAST.

JOHANNESBURG.
Etc.

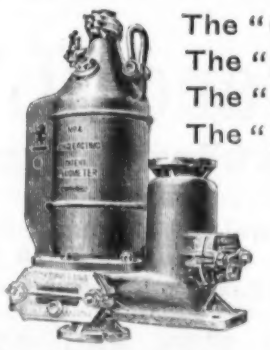
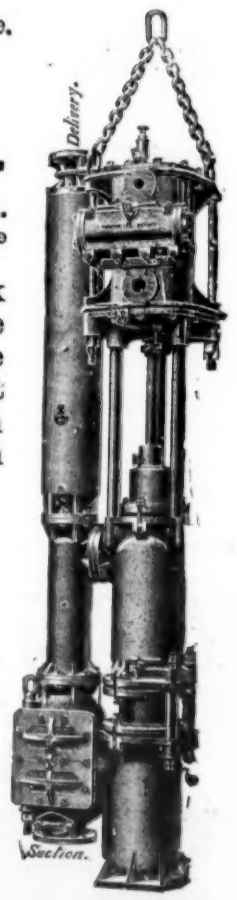


FIG. 875, "FLUOMETER" PATENT STEAM VACUUM PUMP.

The "CORNISH" STEAM PUMP.
The "DUPLEX" STEAM PUMP.
The "RAM" STEAM PUMP.
The "RELIABLE" STEAM PUMP.
DONKEY PUMPS.
HORSE PUMPS.
POWER PUMPS.
AIR COMPRESSORS,
&c.



"STRAIGHT-LINE" PATTERN SINKING PUMP

CULWELL WORKS,
WOLVERHAMPTON.

WALKERS'
"PATENT"
INDESTRUCTIBLE
VENTILATING FANS
FOR MINES, TUNNELS, &c.
CONSTRUCTORS OF THE VENTILATING MACHINERY AT THE SEVERN AND MERSEY TUNNELS.

PATENT ANTI-VIBRATION SHUTTER
Applicable to all enclosed Fans

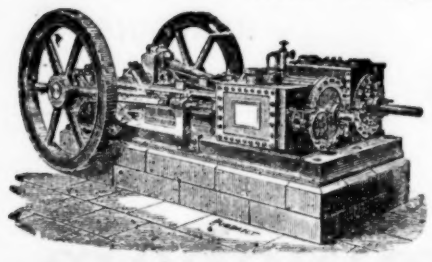
WALKER BROTHERS
Engineers,
Pagefield Ironworks,
WIGAN.

PATENT AIR COMPRESSING ENGINES
GAS COMPRESSING ENGINES
BESSEMER BLOWING ENGINES

upwards of 400 of the above now AT WORK indicating in the aggregate 150,000 Horse-Power

Fisher & Walkers' Patent Friction Clutch & Underground Haulage Machinery
THIS GEARING IS NOW EXTENSIVELY IN USE FOR HAULAGE PURPOSES.
The objects attained are SIMPLICITY, ENDURANCE OF THE MACHINERY AND ROPES with a MINIMUM EXPENDITURE OF POWER.

AIR COMPRESSORS
With Compound Air and Steam Cylinders,
Fitted with SCHRAM'S Inlet and Outlet Valves giving the greatest efficiency.

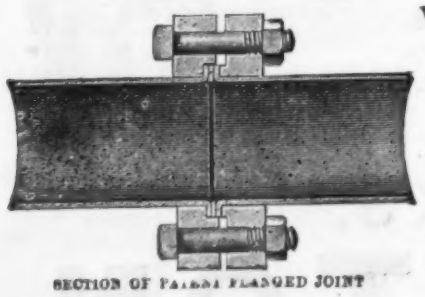


SCHRAM'S IMPROVED
Rock Boring Machines.
Supplied to the Indian, Colonial, and other Governments.
2500 IN USE in all PARTS of the WORLD.
DIAMOND PROSPECTING DRILLS.
"OPTIMUS" COMPOUND ROCK DRILL.
(P. J. OGLE'S PATENT.)
Consumes 40 per cent. less Compressed Air than any other Drill at the same time giving the most effectual results.
ESTIMATES AND FULL PARTICULARS ON APPLICATION.
RICHARD SCHRAM & CO., 17a, Great George Street, Westminster, S.W.
TELEGRAMS "SCHRAM, LONDON," A1, A.B.C. and The Engineering Telegraph Codes Used.

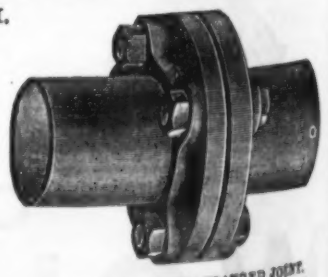
GEORGE GREEN,
FOUNDRY, ABERYSTWYTH.
SILVER MEDALS AWARDED AT THE ROYAL CORNWALL POLYTECHNIC, 1872 & 1876; GOLD MEDAL AWARDED AT THE GREAT INTERNATIONAL MINING EXHIBITION, CRYSTAL PALACE, 1890.
ONLY AWARDS GIVEN FOR CONCENTRATION PLANTS
GREEN'S LATEST IMPROVED
Self-Acting or Automatic
Ore Dressing Machinery.
A Special Plant, on a reduced scale, has been erected at the Works by which samples of METALLIC ORES up to Five Tons may be treated, and the commercial value determined. In this way the most suitable arrangement of Plant is ascertained, a considerable advantage to intending Purchasers of Crushing and Concentrating Plant.
GOLD STAMP AND OTHER MILLS.
Estimates, Catalogues, and Full Particulars on Application.
Telegrams—Green, Foundry, Aberystwyth.

For PURE ALUMINIUM
98 to 99½ per cent. (98 per cent. minimum guaranteed) in
INGOTS, STICKS, & ROLLING SLABS;
ALSO FOR
SHEETS, &c., AND
FERRO-ALUMINIUM.
ALUMINIUM.
APPLY TO
HENRY R. MERTON & CO.,
2, Metal Exchange Buildings, Leadenhall Avenue.
LONDON, E.C.
AGENTS FOR THE BRITISH ALUMINIUM COMPANY, LIMITED.

A. & J. STEWART and CLYDESDALE, Limited.
Glasgow, Coatbridge, and Mossend.
WROUGHT IRON WELDED TUBES and FITTINGS for GAS, WATER, and STEAM.
Light Lap-welded Wrought-iron and Steel Tubes
(SPECIALLY ADAPTED FOR MINES).
With Patent Flanged Joints (as illustrated) for the Conveyance of Water, Steam, and Air, at High and Low Pressures.
LAP-WELDED IRON AND STEEL BOILER TUBES
FOR LOCOMOTIVE, MARINE, AND OTHER MULTITUBULAR BOILERS.
STEEL & IRON PLATES FOR BOILERS, BRIDGES, &c.



SECTION OF PATENT FLANGED JOINT



PLAN OF PATENT FLANGED JOINT.

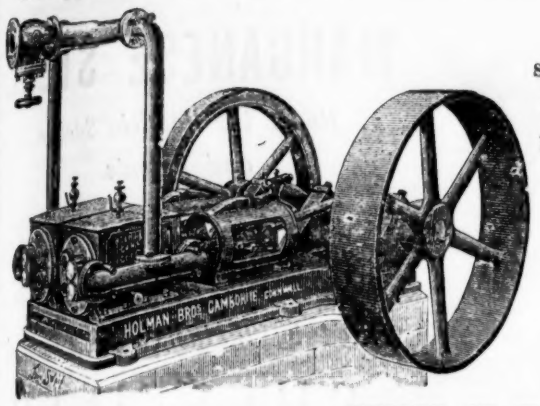
Head Offices: 41, OSWALD STREET, GLASGOW.

HOLMAN Bros., Camborne, Cornwall.

ESTABLISHED 1839.

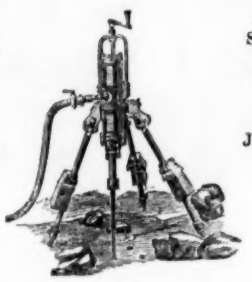
Patentees and Sole Makers of

"THE CORNISH" ROCK DRILL and "THE CORNISH" COMPRESSOR.



FIRST SILVER MEDAL, Highest Award, Mining Institute Contest, 1881.

Three Makers represented.



FIRST SILVER MEDAL Highest Award, Royal Cornwall Polytechnic Jubilee Exhibition Contest, 1882.

Five Makers represented.

AWARDED SILVER MEDAL INTERNATIONAL INVENTIONS EXHIBITION, 1885.

RECORD OF WORK DONE

At Botallack Mine, St. Just, Cornwall, **TWELVE MEN** with **TWO** new Patent **CORNISH ROCK DRILLS** drove, sunk, and rose **288 FATHOMS** in **12 MONTHS,** equal to five times the Speed of Hand Labour

At Wheal Grenville Mine, Camborne, Cornwall, **SIX MEN** with **TWO** new Patent **CORNISH ROCK DRILLS** started from the **150 FATHOMS** level and put up in **EIGHT MONTHS** a **11 FEET** by **5 FEET PERPENDICULAR RISE 46 FATHOMS 5 FEET 6 INCHES,** and about midway drove **1 FATHOM 5 FT.** No communication of any kind was effected until holing to the Shaft brought down from surface

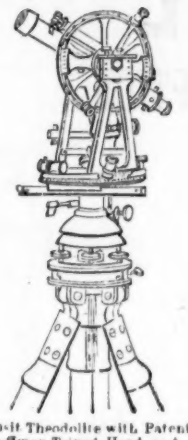
Estimates for ROCK BORING PLANT and GENERAL MINING MACHINERY on Application.

London Offices: 7 and 9, LEADENHALL BUILDINGS, E.C.

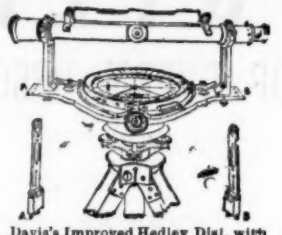
JOHN DAVIS AND SON,

ALL SAINTS WORKS, DERBY;

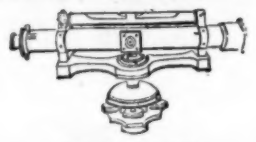
118, NEWGATE STREET, LONDON.



Transit Theodolite with Patent Hoffman Tripod Head, and Trough Compass.



Davis's Improved Hedley Dial, with Telescope and Sights Interchangeable and Patent Hoffman Tripod Head.



Dumpy Level with Hoffman Patent Tripod Head.

MINING, SURVEYING, AND ENGINEERING INSTRUMENTS.

THEODOLITES. LEVELS. TACHEOMETERS.

Davis's Improved Hedley Miners' Dials, with HOFFMAN PATENT TRIPOD HEAD;

AND ALL DESCRIPTIONS OF MATHEMATICAL AND MINING SURVEYING INSTRUMENTS.

Revised Illustrated Catalogues Free to any Part the World.

SECTION (A) MATHEMATICAL DEPARTMENT AND SAFETY LAMPS
SECTION (B) ELECTRICAL DEPARTMENT.

Gold Medal Awarded Mining Exhibition, 1890.

A. B. C. CABLE CODE, 4TH EDITION.

Jeffrey Electric Coal Cutter and Drill may be seen at work in the Model Mine, Cardiff Exhibition, Instruments, &c., Stand No. 315.

AWARDS: CRYSTAL PALACE, 1890; TASMANIA, 1891; KIMBERLEY, 1892.

CONCENTRATION.

The Clarkson-Stanfield Ore Reduction Co. (Limited).

In the CLARKSON-STANFIELD process of Concentrating Refractory and Complex Ores no water is required; dust is reduced to a minimum; the loss of Mineral through water-borne Slimes is obviated.

OUTPUT ½ TO 2 TONS PER HOUR, ACCORDING TO SIZE OF MACHINE.

CONCENTRATOR TO BE SEEN IN OPERATION AT THE COMPANY'S ONLY ADDRESS,

6, COLONIAL AVENUE, MINORIES, LONDON, E.

The Machine is superior to Sieves for Sizing Homogeneous Substances, such as Emery, Sand, and Powders, and may be used to great advantage in the preparation of Ochre.

N.B—The owners of the Carndochan Mine, near Bala, North Wales, will, by arrangement, show their CLARKSON-STANFIELD plant working on a Refractory Low Grade Gold Ore.

JOINT-STOCK COMPANIES.

NEW REGISTRATIONS.

THE following are among the joint-stock companies registered at Somerset House since our last notice:—

Lady Florence United Gold Mines (Limited).—Registered October 29 by W. F. Saunt, 3 and 4, Fowkes Buildings, Great Tower Street, E.C. (capital £75,000, in £1 shares), to adopt and carry into effect an agreement, particulars of which are not given, for the acquisition by purchase or otherwise, of the following mining properties:—(a) A 24 acre lease, No. M., known as the Lady Florence; (b) a 12 acre lease, No. M., known as the Lone Hand; (c) a 24 acre lease, No. —, known as the Lone Hand Extended, and to develop and turn to account the same.

Rowell's Consolidated Gold Mines (Limited).—Registered October 30 by Palmer and Co., 14, S. Helen's Place, E.C. (capital £150,000, in £1 shares), to acquire by purchase and work certain mines and mining properties situate in the county of Clarendon, New South Wales, and known respectively as the Prince of Wales, Dutch Hole, and Just-in-Time Mines, and to acquire any other mines, mining rights, and property supposed to contain minerals or precious stone, wherever situate, and undertakings connected therewith; to acquire or construct and maintain any mills, canals, waterworks, rail and tram roads, wharves, and all kinds of plant and machinery, businesses, concerns and undertakings, mortgages, charges, annuities, patents, licenses, shares, stock, debentures.

Kapia Vermont Gold Mining Company (Limited).—Registered October 26 by Reynolds, Blogg, and Co., Union Court, Old Broad Street, E.C. (capital £150,000, in £1 shares), to acquire certain mines and mining properties situate in the colony of New Zealand, and generally to search for and raise in the colony of New Zealand or elsewhere gold or other ores, metals, minerals, or substances, and to carry on the business of miners, millers, smelters, &c., in all or any of its branches; as suppliers of water, merchants, manufacturers, &c.

Harcourt Gold Mine (Limited).—Registered October 29 by Timbrell and Deighton, 44, King William Street, E.C. (capital £15,000, in £1 shares), for the acquisition by the company of a certain gold mining lease in Western Australia, and to develop, work, turn to account, and deal with the same in such manner as the company shall see fit; to employ and send to West Australia or elsewhere any explorers, experts, and agents for the purpose of exploring lands, &c., in any part of the world; to construct and maintain rail and tram roads, wharves, docks, canals, water rights and ways, quarries, forests, pits, mills, buildings, machinery, &c.; to settle, improve, colonize, and cultivate lands and hereditaments by clearing, planting, or building thereon. Registered office, 9, St. Mildred's Court, E.C.

Leviathan Gold Mine (Limited).—Registered October 31 by Robinson and Stannard, 19, Eastcheap, E.C. (capital £100,000, divided into 400,000 shares of 5s. each), to acquire mineral lands in the colony of Western Australia, and to search for, prospect, examine and explore mines and ground supposed to contain minerals or precious stones, and to smelt, refine and prepare for market, or otherwise deal with, any ores, metals, and mineral substances of all kinds, and to deal in bullion, specie, or coin.

Yemmegondi Estates Company (Limited).—Registered October 30 by Francis and Johnson, 26, Austinfriars, E.C. (capital £50,000, in £10 shares), for the acquisition, by purchase or otherwise, of certain land or coffee estates situate in the province of Coorg, in the Presidency of Madras, India, the same being known as the Yemmegundi Estate, together with all bungalows, houses, storehouses, mills and cattle lines, buildings, machinery, engines, tools, live and dead stock in or upon the same, together with all yards, gardens, coffee and other trees, coffee nurseries, fences, hedges, ditches, ways, water ways, &c.; and to develop, deal with and turn to account the same in such manner as the company shall see fit; also as miners, millers, smelters and metal-lurgists.

Magnet Princess Mines (Limited).—Registered October 29 by Dixon, Watts, and Elkin, Savoy Mansions, The Savoy, W.C. (capital £75,000, in £1 shares), to institute, enter into, carry on or participate in financial, commercial, mercantile, industrial, manufacturing, mining and other businesses, works, contracts, and undertakings, and financial operations of all kinds, to acquire any mines, mining rights, &c., to develop and work the same in such manner as the company shall see fit.

CONTRACTS OPEN:

FOR MINE, QUARRY, RAILWAY, AND ENGINEERING WORK, STORES, &c.

**** We shall be obliged by being promptly placed in possession of particulars regarding contracts open for competition, and of the results of successful tenders. In the latter case contract prices should be given.*

The date given is that by which tenders must be delivered, in nearly all cases further information can be obtained on application at the addresses given. In applying for such the name of "The Mining Journal" should be mentioned as the original source of the information, concerning which further particulars are required.

Foundry Metal Work. November 18 (*Amsterdam*).—For supplies of galvanised iron metal, ironmongery, and hardware, clocks, paper, oil and colours, red lead, coal, and coke for the Dutch Colonial Ministry at "Fort Nassau van 't Algemeen," Amsterdam.

Span. November 19 (*London, E.C.*).—For supply and delivery of one 80 feet plate span, for the Nilgiri Railway Company (Limited), in accordance with specification and conditions to be obtained at the company's office on payment of 10s., which will not be returned. Copies of the drawing may be obtained at the office of the consulting engineer, Mr. Horace Bell, M.I.C.E., Victoria Mansions, Westminster. Tenders, in sealed envelopes, marked "Tender, 80 feet Span," must be lodged at the company's office, before noon on 19th inst. Mr. J. A. Kelman, secretary, 25, Winchester House, London, E.C.

Coal. November 19 (*Bristol*).—For the supply of coal, raised from the Bristol coal fields, to the schools, during 12 months from December 1, for the Bristol School Board. Tenders, on forms to be obtained from Mr. William Ayers Adams, clerk, Guildhall, Bristol, must be delivered at the office by noon on 19th inst.

Pump. November 21 (*Londonderry*).—For supply of a double and also a single action pump, to be erected at the well in Carrigans, which is about 57 feet in depth, for the Guardians of Londonderry Union. Tenders, accompanied by drawings and specifications, must be lodged with Mr. W. L. Perry, executive sanitary officer, Poor Law Office, Londonderry, by 12 noon on 21st inst.

Permanent Way Materials November 21 (*Vienna*).—For the supply of a quantity of fishplate bolts, washers, switches, and crossovers, for the Austrian State Railway Department at Vienna.

Railway Construction. November 26 (*Vienna*).—Construction and bridge work on the Barzdorf and Hungsdorf railways. Application to the Ministry of Railway at Vienna.

Adit Sinking. November 30 (*Lichfield*).—For sinking a shaft and driving an adit (contract No. 1), and for a boring 12 inches in diameter and 150 feet in depth (contract No. 2), at their waterworks, Walsall-road, Lichfield, for the trustees of the Lichfield Conduit Lands. Printed copies of the specification and form of tender and contract may be obtained on application. Tenders must be on the forms issued by the board enclosed in an envelope, sealed, and endorsed "Tender for Sinking a Shaft" or "Tender for Boring," as the case may be, and delivered by 12 noon on November 30 at the office of Mr. Alan E. Chinn, warden, The Close, Litchfield. Applications for specification and forms of tender must be accompanied by a fee of £1 1s., which will be returned on receipt of tender.

Coke. December 1 (*Felling, Durham*).—For leading coal, and the supply of coke used in the Heworth School Board schools for 12 months ending December 31, 1897, for the Heworth School Board. Tenders, on the printed form, which may be obtained at the Board Office between nine and ten each morning are to be sent to Mr. George Bolam, clerk, Felling, Durham, by December 1.

Coal. December 3 (*Bourne, Lincs.*)—For the supply of from 150 to 180 tons of good coal for the use of the poor, to be delivered from the Bourne railway station to the order of the Trustees in quantities of not less than 4 cwts. between December 3 and 24, for the Bourne Charity Trustees. Sealed tenders marked "Tender for Charity Coal," must be sent to Mr. S. W. Andrews, clerk, Bourne, by December 3.

BRITISH GUIANA'S GOLD INDUSTRY.

The R.M.S. *Solent*, which left Georgetown on the 15th ult., took gold to the value of $115,073·72. The shippers were:—

	Ozs.	dwts.	grs.
Colonial Bank	2195	0	0
British Guiana Bank	4170	4	21
Sproston D. and F. Co. ...	91	10	9
Total	6456	15	6

The following are the returns of gold entered at the Department of Mines for the weeks ending:—

	October 10. Ozs.	dwts.	grs.		October 17. Ozs.	dwts.	grs.
Barama ...	142	3	0	.....	108	17	16
Barima ...	635	5	2	.....	589	12	6
Cuyuni ...	577	15	2	.....	671	6	19
Demerara ...	—			.....	—		
Essequebo ...	542	3	13	.....	694	3	4
Groete Creek ...	39	10	3	.....	38	18	18
Mazaruni ...	—			.....	12	12	9
Potaro	1453	0	0	.....	385	3	22
Puruni	144	5	12	.....	91	4	3
Total	3534	2	8	.....	2591	19	1

Export of gold from January 1 to October 26:—

	Ozs.	dwts.	grs.	
1896	93,446	6	1	at $1,661,641·93
1895	95,101	15	6	at $1,686,649·65

STEAMERS FOR BRITISH GUIANA.—The Government of British Guiana is inviting tenders for six subsidised steamers, 170 feet long, to go 10 knots, and one steamer, 100 feet long, also to steam 10 knots, and four steam ferryboats, 75 feet long, of 8 knots speed.

The BRITISH SOUTH AFRICA COMPANY notifies with reference to the issue of new shares that the first batch of circulars to 15,000 of the shareholders (names A to M) has been posted; the remainder to about 16,000 shareholders (names N to Z) have been posted.

MESSRS. JOSEPH EVANS and SONS, of Culwell Works, Wolverhampton, have received an order for two sinking pumps, each capable of raising 20,000 gallons per hour 600 feet high, in one lift, for the Colliery and General Contracts Company, for their sinking near Dover.

The ASSOCIATION OF MINES OF THE SOUTH AFRICAN REPUBLIC have cabled to their London agents, the Robinson South African Banking Company (Limited), that for the month of October an output amounting to 35,970 ounces was obtained by the following companies:—Roodepoort United Main Reef, Meyer and Charlton, Princess Estate, George Goch (Amalgamated), Wemmer, Langlaagte Estate, Block B Langlaagte Estate, Lancaster, Langlaagte Star, New Midas Estate, Porges Randfontein. This compares with 35,429 ounces in the preceding month.

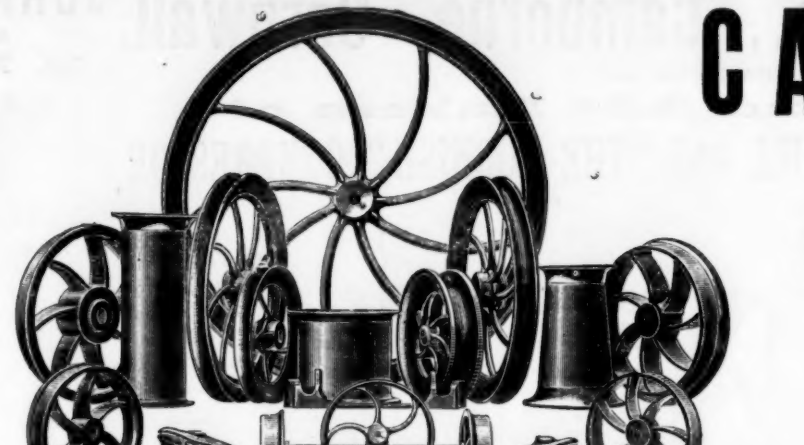
STEEL

OF EVERY DESCRIPTION.

TOOL STEEL,
DRILL STEEL,
HAMMERS,
STEEL FORGINGS,
MINING REQUISITES,
ETC., ETC.

FOR

COLLIERIES, MINES. QUARRIES, ETC.



CASTINGS

Sole Makers of

MANGANESE STEEL

Under the Hadfield System and Patents.

TUB WHEELS AND AXLES

Fitted by Hadfield's Fast Method.

HADFIELD'S STEEL FOUNDRY CO., LTD., SHEFFIELD.

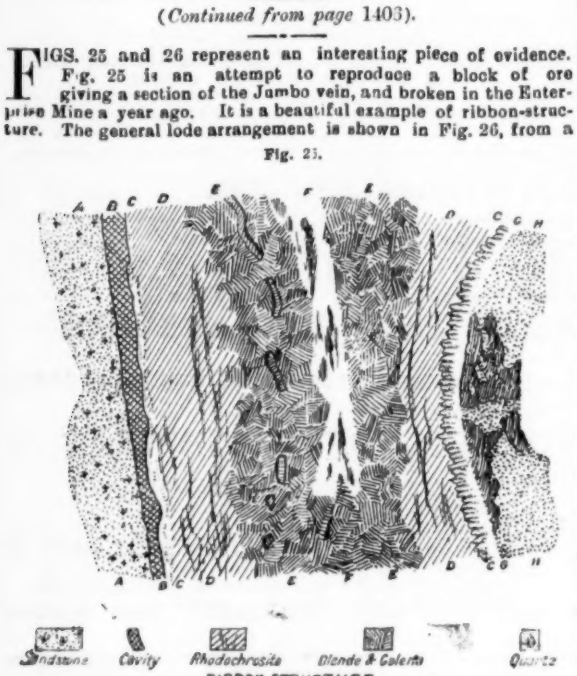
VEIN WALLS.*

By T. A. RICKARD, Denver, Colorado.

(*Continued from page* 1403).

FIGS. 25 and 26 represent an interesting piece of evidence. Fig. 25 is an attempt to reproduce a block of ore giving a section of the Jumbo vein, and broken in the Enterprise Mine a year ago. It is a beautiful example of ribbon-structure. The general lode arrangement is shown in Fig. 26, from a

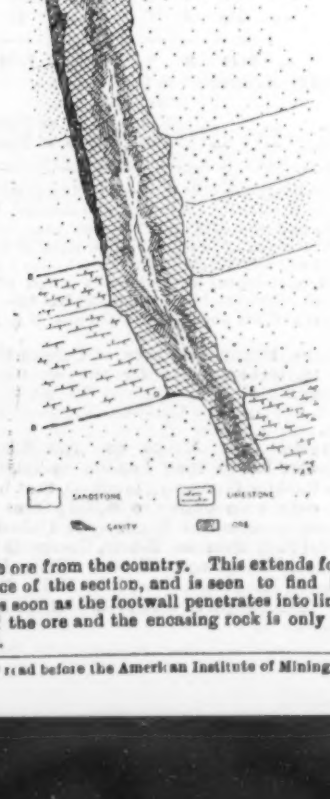
Fig. 25.



sketch made November 19, 894. The vein follows a line of faulting, nearly at right angles across sedimentary beds of alternating sandstone and limestone. The extent of the fault is clearly marked by the dislocation of the bed of lime, B B, and its down-throw of about 2 feet on the hanging wall. The country on the foot has its bedding planes turned down, while on the hanging the reverse occurs.

The vein is about a foot wide, and is composed of a regular symmetrical arrangement of diverse minerals. The centre of the ore is marked by a seam of quartz. The most remarkable feature of the section, however, is that while on the hanging the ore is frozen hard to the sandstone, on the foot there is an actual vacancy

Fig. 26



separating the ore from the country. This extends for a few feet above the place of the section, and is seen to find its downward termination as soon as the footwall penetrates into limestone, where the contact of the ore and the encasing rock is only marked by a slight selvage.

* A P. per read before the American Institute of Mining Engineers.

This description will render more intelligible the meaning of the detailed section of the vein presented in Fig. 25, which is intended to portray as accurately as possible the characteristics of the ore occurrence at the point in the lode marked A on the outline drawing, Fig. 26.

The main features are as follows:—The western boundary of the vein is fairly straight, dipping, as the vein does, eastward. It is separated from the country rock, a light gray medium-grained sandstone, A A, by an actual vacant space, B B, of about half an inch. The edge of the ore nearest the footwall consists of an irregular band, C C, of about $\frac{3}{4}$ of an inch of quartz, speckled with pyrite and chalcopyrite. Towards the bottom this quartz narrows, but becomes clearly defined into a crystalline comb, with teeth at right angles to the vein.

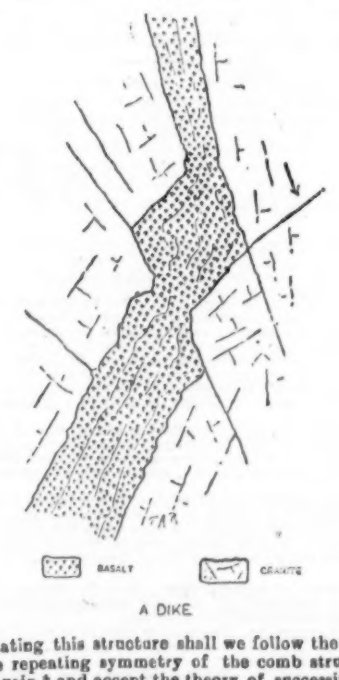
Then comes a zone, D D, averaging $1\frac{1}{2}$ inches of pink rhodochrosite. This band is broken into by veinlets of quartz, some of which are only branches from the outer seam, C C, while others traverse the rhodochrosite in bluish-gray streaks parallel to the general structure, and are peppered over with particles of pyrites.

The rhodochrosite band is broken on the right by the irregular outline of the blende and galena, E E, which is about 2 inches wide. There are blotches of yellowish "resin-blende" and patches of bluish-black galena distributed throughout a dark and intricate mixture of these minerals. They shade out into the white quartz, F F, which makes a bilaterally symmetrical division in the ore. The dark mass of the sulphides encloses shreds of rhodochrosite having distinct outlines.

Along the median line of the central quartz seam, F F, occurs a succession of geodes line not only with crystals of the quartz itself but also with beautiful crystals of stephanite. The latter are seen in irregularly distributed clusters. In the outer quartz there are numerous specks of pyrite.

The eastern half of the vein presents, in reverse order, an exact repetition of the mineral bands just described. The separation between the rhodochrosite band and the outer quartz is more distinct. The dark sulphides also present a cleaner outline. The outer quartz has its comb-like structure strongly developed, the points of the crystals penetrating into the pink rhodochrosite and their base gradating into the dark grey sandstone of the hanging wall. There is not the slightest selvage or parting of any sort. The quartz is, as the miners say, "frozen" to the sandstone. The latter is marked by clouds of dark mineral hardly defined enough to be described as dendritic. This feature is traceable to the diffusion of minute particles of pyrite and stephanite. The rock is rich enough to be classed as ore.

Fig. 27



A DIKE

In interpretating this structure shall we follow the explanations given for the repeating symmetry of the comb structure of the Drei Prinzen vein,* and accept the theory of successive crystalline growth from the sides of a gaping crevasse, or are we to conclude that the mineral aggregates now forming the ore were derived by the substitution, bit by bit, of rock in place by material deposited from solutions circulating along the line of fissuring?

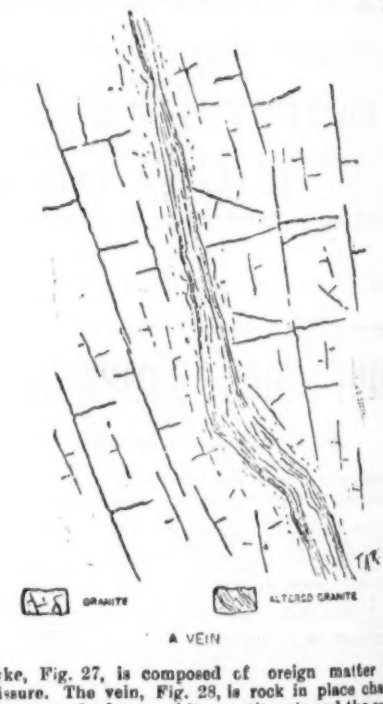
Do we conceive of veins as formed by the filling of pre-existing cavities, whatever their shape may be, produced by the rupturing of the earth's crust, or do we believe that lodes can be formed without any previously prepared vacant space and simply by the chemical interchange vaguely covered by the term metasomasis? or, again, do both these explanations find corroboration in the daily observations of the mine?

* As drawn by Von Weissenbach in his book published at Leipzig in 1836. Other notable examples of this structure are C. Le Neve Foster's drawing of the Huel Mary Ann lode (in the *Transactions* of the Royal Geological Society of Cornwall, Vol. XIX., 1875), and that of the Carn Marth lode by J. H. Collins (in the *Proceedings* of the Institute of Mechanical Engineers, 1873.) Reference may also be permitted to the writer's four coloured drawings of the Eureka, Songbird, Jumbo, and Kitchen veins, accompanying a paper entitled "Vein Structure in the Enterprise Mine," in the *Proceedings* of the Colorado Scientific Society for 1895.

Walking recently along the railroad grade between Anaconda and Cripple Creek, in El Paso County, Colorado, I found in the sides of two open cuts the testimony transcribed in Figs. 27 and 28, one representing a typical dyke and the other a typical ore vein. In both cases the country is the coarse-grained, red granite of the Pike's Peak region. In both the jointing is well developed. The dark dyke of basalt in Fig. 27 cuts clean through the red granite. Its boundaries are clear; there is no mistaking the line of separation. Moreover, it is evident that the walls have duplicate outlines and that rupturing has separated them without the destruction of their definition. The throw of the fault-fissure followed by the dyke can be seen to be about 14 inches, and its direction is indicated by the arrow.

Fig. 28, sketched in the immediate neighbourhood, illustrates a gold-bearing vein in the same granite formation. Here there is no essential difference between country and the vein filling. The latter is altered granite, easily recognisable as such, in spite of its having become granular and soft through the kaolinisation of the feldspar. The walls of the vein are ill defined, the streakiness of the filling being dimly repeated in the encasing rock. The vein filling assays $2·60 gold per ton at this place, but is richer, without other material change of character, a few rods distant.

Fig 28



A VEIN

The dyke, Fig. 27, is composed of foreign matter filling an evident fissure. The vein, Fig. 28, is rock in place changed into ore by the removal of some of its constituents and the substitution of new ones. In the former case liquid material rose into the fissure, probably *pari passu*, with its formation. On the other hand, the vein of gold ore traversing the granite gives no evidence of the occupation of a fissure by the incoming of new material. The ore is granite in place, softened, decomposed, discoloured, and impregnated with gold, but still granite, clearly enough. Some liquid more subtle than molten lava was the vehicle which brought in the minute particles of gold and removed the alkali of the feldspar. It was water circulating for long periods, and patiently searching out its way, which quietly changed the granite into gold-bearing ore.

(*To be continued.*)

GERMAN IRON.—At the general meeting of the Pig Iron Selling Association of the Siegen district (Westphalia), the Chairman stated that during the last three months orders for some 275,000 tons of pig iron had been booked, which, with previous orders on hand, will occupy all the works in the district for the next seven months. The annual reports of 1895-96 of the Dortmund Union Iron and Steel Works states that the output of the company during the fiscal year amounted to 276,799 tons, against 188,287 tons in the previous year, at an average price of 104·96 marks, against 109·67 marks, the fall in the average being due to the fact that a much larger proportion of partly wrought produce had been made and disposed of.

IRON ORE IN SWEDEN.—There has been a marked development in the Swedish iron ore industry, the total quantity exported during the nine months ending with September last having amounted to 968,650 tons, as against only 664,464 tons in the corresponding period of 1895.

ELECTRIC POWER FOR HAURAKI.—It is stated that a proposal for supplying the Hauraki gold fields in New Zealand with electric power is now under discussion in Auckland. The generating power is, it is proposed, to be obtained from the Huka Falls of the Waikato River, near Lake Taupo, distant about 80 miles from Te Aroha, on the southern fringe of the gold mining area, and about 160 miles from the outermost point of the gold area at Cape Colville.

ELECTRICAL PROBLEMS IN MINING.

By Captain C. C. LONGRIDGE, M.F.I.M.E., M.I.M.E., &c.

II.—Electric Transmission.

"DURING the past eight years," said Mr. Irving Hale at the Colorado meeting of the American Institute of Mining Engineers in September last, "and principally in the last four years, 52 distinct companies in the Rocky Mountain district alone have installed electric power machinery for mining and ore reducing, comprising 62 generators, aggregating 7988 kilowatts, and 135 motors, aggregating 4816 horse-power, operating every variety of mining and milling machinery. Electric apparatus formerly regarded as delicate and peculiarly subject to breakdowns has been brought to such a degree of perfection that depreciation and repairs may be considered as less on this than on any other kind of machinery. Under these conditions it may safely be predicted that during the next five years much greater progress will be made, and the application of electricity will become one of the most attractive and important features of mining economy." The growth, indeed, in the use of electricity for mining is patent in all parts of the world, and fully establishes the necessity for the modern mining engineer to be, if not an expert electrician, at least thoroughly versed in the first principles of electrical work. In a prior article the advantages of electricity as a motive power were briefly stated, and an endeavour made to show how a comparison of costs between the use of this power and of steam could be instituted. One of the principal items in these costs is that of transmission, in which certain problems are now to be considered.

To illustrate and solve these, a selection is made of two examples, between which, as limits, are included a large number of cases occurring in mining practice. In the two illustrations it is assumed that a given horse power, not exceeding 100 horse power, is required at a mine, and that at a certain distance, not exceeding six miles, from that mine, there is a source of water power, which in the one instance is sufficient to generate a power far in excess of what is needed, but in the other case barely suffices to yield the amount required. In the former example, as a large surplus of power is available, it clearly matters little what transmission loss is incurred. Waste of power, therefore, within reasonable limits is here of less moment than the saving of initial capital outlay. In the latter case, as the water power barely suffices for its work, loss in transmission is of the greatest importance; and, within a certain margin, the first cost of the plant and line is of minor value than the saving of power effected. To be in a position to state, in such cases, how far it is wise to sacrifice power to capital, or capital to power, a mine engineer requires to know how power is lost in transmission, and how that loss can be reduced. Transmission losses are of two kinds: that, less properly a transmission loss, due to the employment of generators and transformers; and that, strictly the line loss, due to the resistance of the conductor. The former is practically fixed and unavoidable, the average commercial efficiency being 90 per cent. for generators and 90 per cent. for continuous current transformers. But the latter varies with conditions partly under control. Consider for a moment that as hydraulic power transmitted through a pipe consists of the quantity or flow of water and the pressure or head, so any electrical power transmitted along a line comprises likewise two factors, the quantity, flow, or current (C), of which the unit is the ampere, and the pressure, tension, voltage, or electro-motive force (E.M.F. or E.), of which the unit is the volt. Thus P = EC. Hence it appears that, without affecting the power (P), we may vary the factors (C) and (E); that is to say, we may reduce the number of amperes forming the current (C), and proportionately increase the number of volts comprising the voltage (E) or *vice versa*. Again, as the resistance (R) of the conductors, which causes the line loss, is in a manner analogous to the hydraulic friction that reduces the flow of water through a pipe, and varies directly with the length of the pipe and inversely with its diameter or cross section, so the electrical resistance that diminishes the flow of the electric current is directly proportional to the length of the line and inversely proportional to the area of its cross section. In other words, the resistance increases as the line is lengthened, and decreases as the cross section is enlarged. Hence the line resistance

$$(R) \text{ varies as } \frac{\text{length of line}}{\text{area of cross section.}}$$

It is, therefore, evident that if the cross section of the line wire is increased in the same proportion as its length, the resistance and, therefore, the line loss remains unaltered. The practical outcome of which is that with any given length of line the resistance and loss may be diminished by increasing the cross section of the line, that is by either thickening the wire or by employing more wires of the original section. One means, therefore, of lessening the transmission loss is to increase the thickness of the conductor. But as the weight and, therefore, the value of the wire increases, roughly speaking, as the square of the diameter, while the resistance lessens only inversely as that square, it is obvious that this is a costly method of reducing the line loss; and, though theoretically the latter could be indefinitely diminished by enlarging the size of the conductor, commercial considerations confine this increase to comparatively narrow limits. The economical point is said to be reached when the annual percentage charge (p) for interest on capital outlay, depreciation, and repairs (K) on the whole line, equals the annual money value (W) of the energy or horse power lost in transmission. That is, when $(pK) = W$. But this statement applies only to cases where the capital outlay is strictly proportional to the weight of metal in the conductors—that is, when the total line cost increases directly, as the increase in the area and weight of the conductors. In practice this is seldom the case. For instance, a pole or overhead line is frequently built with a capacity for additional wires, and in any case the thickness of the wire might be varied within fairly wide limits without having to alter the number or cost of the supports, and thus there is, even in this particular, a certain portion of the capital outlay which does not depend on the area of the conductors. It would, therefore, be more correct to write $p(K-K_1)=W$, where K_1 represents that part of the capital outlay which is constant and independent of the area of the conductor. This modified statement of Kelvin's law affirms that if a certain current has to be sent through a given length or circuit, then there is one particular area of cross section by using which the annual cost of sending the current becomes a minimum; and that this area of the conductor is that in the use of which the annual cost of energy wasted by its conversion into heat, under the influence of the line resistance, is equal to the annual interest, depreciation, and repairs over that portion of the capital outlay which can be considered proportional to the weight of the copper used. For instance, suppose in a given case it is found that $p(K-K_1)$ is £300 per annum, while the value of the horse-power lost is £400 per annum. In such a case it would probably pay to expend, on increasing the copper in the line, a sum represented by an annual interest of (say) £60. By thus decreasing the line resistance, and, consequently, the power lost, the two figures would be brought to balance, and the condition of maximum economy would be fulfilled. This law, though affording an academic solution in many cases of little or no commercial value, indicates very accurately in other cases one method of reducing the line loss.

There is, however, another method which can be used in conjunction with the above. As the flow of water in a pipe increases with the head or pressure, and decreases with the increase of frictional resistance, so the flow or current (C) of electricity is found to increase with the tension, voltage, or electro-motive force (E), and to diminish as the resistance (R) becomes greater. Otherwise stated, $C = \frac{E}{R}$. It is clear, then, that we can increase the flow of the current, not only by decreasing the resistance through the use of a thicker conductor, but also by raising the voltage or electro-motive force. In other words, if the electro-motive force is increased in proportion to the distance, the cost of copper in the conductors can be kept the same. Theoretically, in any given conductor the voltage could be raised until the resistance became inappreciable, and there was little line loss at all. But here, again, practical considerations impose certain limits. Without at present giving reasons, it is assumed that for transmission distances up to six miles it would be advisable to employ a continuous in preference to an alternating current. The question, therefore, is what is the maximum voltage that should be employed with a continuous current, so as to reduce the transmission loss to a minimum. Theoretically, as we have said, there is no limit. Practically, for the time being, few engineers in the above cases would care to go beyond 3000 volts. The objections to higher voltages are purely commercial. High voltage, that is above 1000 volts., generators and transformers at present cost more to build and maintain than those for a moderate voltage, and the higher the electro-motive force used the greater the difficulty and cost of ensuring insulation in the commutators and armatures and on the line itself. Whilst, therefore, by increasing the voltage we can, in theory, proportionately reduce the thickness of the wire without affecting the power transmitted, the commercial limit for so doing is reached, when the increased cost of insulation necessitated by the higher voltage becomes equal to the saving of copper in the line. For distances and power such as are here assumed, this commercial limit is at present between 2000 and 3000 volts. The writer is aware that some manufacturers, among them Messrs. Siemens Brothers, construct continuous current machines, using even higher voltages. But when it is remembered that mining plant in remote districts should be specially designed with a view to simplicity and low cost of maintenance, he is of opinion that most mining engineers at present will adhere to the limits given above.

Remembering, therefore, that line losses may be reduced by employing thicker conductors and higher voltages, both involving increase of capital outlay, it follows that in the case of cheap production by ample free water power, the most economical mode of dealing with the generation and transmission of power is to lay down the simplest and cheapest hydraulic plant, to generate a large current at a low voltage, spending as little as possible on copper, by using the least metal section consistent with security from overheating and breakage. All circuits require a certain amount of mechanical strength in order that the line may be laid with maximum economy and with sufficient durability to withstand, for a reasonable time, the annual wear and tear. Although, therefore, the safe heating limit might indicate a conductor that in first cost would be most economical, it would certainly happen that from a mechanical standpoint the line would be very weak, and in a very short time, by depreciation and repairs, would prove enormously expensive. In no case should economy militate against the adoption of the best form of conductors and insulators, and of a substantial pole line. As regards the line loss, it would under no circumstances be economical to waste in transmission more, or even as much, as half the power generated. In the second instance, where the prime motive power is barely sufficient for the demand, the converse will hold true; such water motors, though more costly, as give the highest efficiency should be employed, high voltage generators and transformers adopted, and a proportionately larger investment of capital in conductors be made in order to reduce the line loss to a minimum.

MINING IN NOVA SCOTIA.

(FROM OUR OWN CORRESPONDENT.)

THE fiscal mining year ended on September 30, and, so far as the gold mining industry is concerned, it must certainly be considered highly satisfactory. During the past year not only have several totally new districts been discovered, but many old abandoned districts have been reopened. Foremost among these is the old mining camp of Goldenville, which, from the early days of gold mining in this province until the year 1882, was the staple gold-producing district of Nova Scotia. In all, Goldenville has produced over $2,000,000 in gold. It was abandoned in the early eighties because the ore was supposed to have decreased in value; but what really happened was that the workings, as they increased in depth, were getting into a certain amount of refractory gold, and the miners and managers of those days, with most of whom mining was only a side show, knew of nothing but free milling gold, and so abandoned the workings. Added to this, powder and supplies were much dearer than they are now, and anything under half ounce ore was not considered worth working.

Goldenville to-day has probably greater possibilities than any other known district in this province. The whole district is crowded with leads; on the south dip of the anticlinal are several huge belts of leads, some of which have been worked by open cut for a width of over 60 feet, whilst the lowest returns ever given were $4·75 per ton of free milling gold. Some of these intercalated leads have been worked to a greater depth than 150 feet, while the extent of the workings on the lead has been very limited. On the north dip of the anticlinal the veins are smaller and much richer, $18 we believe being the lowest returns per ton. During the past year two companies have started operations in Goldenville, and both are flourishing and likely to flourish. The New Glasgow Company, with only a 10 stamp mill, are turning out over 200 ounces per month, while their expenses are very small. The Blue Nose Company, with a 12 stamp mill, have met with such encouraging results that they are putting in an extra 20 stamps.

Beaver Dam, another low grade proposition, is being opened up now. Here there is an intercolated belt of quartz and slate, both of which are auriferous, the extent of which is not yet known, the hanging wall not having yet been reached by the crosscut. A trial crushing of 745 tons gave $2965 in gold, or equal to $3·98 per ton. Ore is being mined and milled in Nova Scotia for $1·65 per ton, including all expenses, so that both these propositions appear to have a lasting future before them. The Brookfield Mine is another instance of an abandoned mine being successfully reopened. This mine during the past fiscal year has yielded over 4500 ounces of gold, with only a 10 stamp mill, while the tailings have at times run over ½ an ounce per ton. Here the owners are putting in a new 20 stamp mill with concentrators, and are erecting a chlorination plant, which will be running before Christmas.

The Golden Lode, the Richardson, the New Egerton, and the Woodstock Mine have all given good returns, while a number of smaller properties have returned very handsome profits to their shareholders and owners.

With regard to new finds, the discoveries at Cow Boy and Eastern Passage are the most remarkable. These finds are within 10 miles of the City of Halifax, the capital of the province, and they go far to show how very incompletely the province has been prospected. Only one mill (5 stamp one) has as yet been erected. This mill has since its erection returned between 50 and 100 ounces per month, the quartz crushed running from 1 to 2 ounces. A large number of quartz veins showing considerable quantities of gold have been uncovered, and Cow Boy promises to be one of the best districts in the province next year.

An important new find has been made in the old district of Tangiers. Previously only the south dip of the anticlinal has been worked. During the latter part of the year the north dip was located, and some very handsome specimens of heavy nuggetty gold taken out. New finds have also been made at Chezzetcook and in several other districts.

Looking at the prospects of the coming year, there appears to be no reason why the existing mines should not keep up their record of 1896, while with increased stamping capacity we look for increased returns from the New Egerton, the Richardson, the Blue Nose, and North Brookfield. We also expect the new chlorination works at North Brookfield will considerably increase the yield there. The Duffin Mine, which some years ago produced large returns, or about $8 ore, has been taken hold of by Mr. R. G. Leckie, of Orford copper fame, who will put the mine in shape, and erect a large chlorination works there.

American capital is being placed in several of the mines, and there is a general feeling of confidence in the industry such as has not been experienced for many years.

In a later issue I shall have something to say on the coal and iron industries of Nova Scotia.

MINING IN VICTORIA.

THE AUSTRALIAN GOLD YIELD.—INCREASE FOR VICTORIA.

(FROM OUR VICTORIAN CORRESPONDENT.)

THE Deputy Master of the Melbourne Mint furnishes the usual returns of the gold received by him for coinage during the present year. It is customary with the Mint to close its books 10 days before the end of each quarter, and to carry forward the gold then received to the succeeding period. The first table, therefore, refers to the September "Mint quarter" and first nine "Mint months" of the present year. It will be observed that the Victorian gold mining operations for the first three quarters of this year have resulted in the splendid increase of 53,760 ounces over the corresponding period of last year.

I.—RECEIPTS OF GOLD.

Source.	September Quarter. 1895. Ozs.	1896. Ozs.	First Nine Months. 1895. Ozs.	1896. Ozs.
Victoria ...	166,020	199,658	526,571	580,331
New South Wales	47	557	220	991
New Zealand ...	8,139	16,766	21,799	50,469
Queensland ...	—	45	7	48
South Australia*	9,807	8,187	33,868	20,273
Tasmania ...	8,832	15,624	37,461	47,437
West Australia...	53,687	57,318	160,949	152,259
Transvaal ...	—	—	—	71
Natal	—	—	8	—
Borneo	—	—	—	259
Light gold coin.	55	42	262	109
Unknown ...	1,220	2,444	4,697	5,394
Total ...	247,807	300,641	785,752	857,641

* Including Northern Territory.

The Mint has no evidence beyond the statement of the depositor as to the sources of the gold. As there is a mint at Syndey it is natural that the receipts from New South Wales and Queensland are very small. New Zealand only sends gold to Victoria when the exigencies of banking require it, the amount noted as having been received being about one-third of the probable yield. South Australia, Tasmania, and West Australia send practically all their gold here. The indications are for a decrease in South Australia and an increase in Tasmania. The Mint is evidently experiencing a busy year. Last year it coined 1,092,820 ounces, and the probabilities are that 1896 will show an advance of 65,000 ounces, principally owing to the increased activity of Victorian mines.

It may be as well here to give a comparison of the coinages during the past 12 months on behalf of Victoria and West Australia respectively, as reported from time to time by the Mint:—

	Victoria.	West Australia.
December quarter, 1895	195,308	65,186
March quarter, 1896	197,190	44,582
June quarter	183,482	50,359
September quarter	199,658	57,317
Total	775,638	217,444

Figures given above refer to the amounts shown in the Mint books. In the following table the amount actually received in the September quarter just ended is given, with a comparison for the same quarter of last year:—

	Victorian. Ounces.	Foreign. Ounces.	Total. Ounces.
Gross receipts according to Mint books	199,658	100,983	300,641
Deduct receipts during last 10 days of June brought to account to September quarter	39,494	8,960	48,454
	160,164	92,023	252,187
Add receipts during last 10 days of September brought to account in December quarter	36,698	24,546	61,244
Quantity actually received in September quarter, 1895	196,862	116,569	313,431
Quantity actually received in September quarter, 1895	195,590	99,104	294,694

It is on these figures that the Mining Department will base its estimates of production, the excess holdings of the banks being added (or the amount of decrease being deducted) so as to bring the statistics as nearly as possible up to date.

The Mint issued 1804 ounces of gold for export during the September quarter. The total gold issues were gold coin £1,169,243 and gold bullion £9502—a grand total of £1,178,745 for three months.

Mr. Stirling's Mission Abandoned.

Vive la gloire! The Victorian Parliament has triumphed, as Thackeray would have written, "over tuppence." During the last week it has enjoyed to its hearts content the feast of heaping insults and contumely upon Mr. Stirling in connection with his proposed mission to London. One of the secrets of the hostility towards him, apart from his natural gifts as a lecturer, his rare intelligence as a scientist, and his unwearying application to his work, was the fact that he is too much given to speaking the truth concerning many Victorian floats in London. I can point to several reports of this gentleman which have been laid aside on properties and discoveries afterwards floated at home. As one leading mining member of the Assembly put it to me, Stirling knows too d—— much to let loose in London. We want a man who will satisfy the company promoter and the Stock Exchange. It is a well-known fact that Mr. Stirling has never held a mining share in his life, and is unapproachable in the discharge of his duties. The Stock Exchange of Melbourne, as a body, fought with a tenacity of purpose against his going, although, much to their credit, the Chairman and several leading members expressed an opposite view; but the company promoting element both inside and outside of Parliament proved the stronger of the two in the fight, and it was recognised that so much injury had already been done to discredit Mr. Stirling in the eyes of English capitalists, that it was a foregone conclusion long before the ultimatum was announced that the mission would be abandoned. On the last night of the debate, on the House assembling, the Minister of Mines rose and read a letter he had received that day from Mr. Stirling positively declining to undertake the mission. He had been so insulted by hon. members in the course of the debate, that while always ready to submit to honest and adverse criticism, the attack made on his character and ability was a revelation to himself, so strange, unjust, and incomprehensible as to cause him even to distrust his own powers to do anything for the colony if he went to London. But, suspecting the power of the attack, and conscious of his own self-respect in the matter, he resented the wrong done him by positively declining to go home in any capacity connected with the mining interests. Thus the curtain fell on one of the most disgraceful incidents which has happened in this Parliament. The Minister of Mines forcibly defended his officer and bestowed on him the highest character. He told the mining members of the House, they would long live to regret the tone of the debate, and that English investors would be left to draw their own conclusions as to the reasons why Mr. Stirling should not go to London. He was quite sure their speeches would do the very opposite to their wishes. It would put English investors more on their guard in connection with Victorian floats. The mining community had sat on themselves and revealed a want of confidence in our relations with English capitalists that would not be forgotten, and was sure to retard the colony's position in London. The Minister (Mr. Foster) painfully felt his defeat, for he has never spoken with greater energy and more acumen of mind. Many of the speakers expressed regret for what they had said, and complained that Mr. Stirling was too "thin-skinned." The more hardened ones listened to the *finale* with jeers and laughter. The incident would be incomplete if I omitted to mention the widespread regret throughout the gold fields of Victoria which the abandonment of the London Mines Mission has caused. The last ray of hope to this community is the mines. At every point of exit on the land side and on the coast the population is streaming out of the colony.

The agricultural holdings are fast drifting back into large holdings of pasture land by foreclosure of mortgage and finance companies.

The farming population is crossing the Murray River and settling on the Riverina wheat lands of New South Wales. Manufacturers are in a moribund stage. Commerce is stagnant, with no signs of improvement. Thousands of the industrial and mining poulation are going to South Africa and West Australia. In one day last week 1246 persons left the colony. Eight years ago the first sign of emigration began to show itself; the tide has gone on increasing till to-day it threatens to draw the whole adult male population away. During the last four years Victoria has lost 65,000 males by departures by sea. In the first half of this year we lost over 13,000, and the male population has been leaving during the past four weeks at the rate of 3200 weekly.

The migration to South Africa is on the increase. Out of a total population of a little over a million, 22,226 are Government servants. An analysis has been made of the proportion of civil servants to the whole population, and the following is the result:—One person in every 53 of the population is a Government servant. One person in every 27 of the male population, or one man in every five between the ages of 21 and 60 is a Government servant, costing the country £2,710,642 per annum in salaries. In four years our national wealth has decreased something like £100,000,000 out of £450,000,000. Our national debt has increased in two years by £460,000. The colony has fallen from the place of premier position to second on the list, and fast dropping astern. The real danger to the colony lies in so many thousands of "the bone and sinew" emigrating. Hitherto, the troubles have only been financial ones, in having to unload lifeless securities on a non-elastic market, and with little sign of improvement. The first danger grappled with, and the bulk of the lands passing into the hands of solvent holders, up went the cry from one end of Victoria to the other. 'The Gold! The Mines!" People who never touched a mining share in their life before were seen daily operating on the market. The progress of the colony seemed assured until the mad "floats" on the Melbourne market in the months of April and May of this year of scores of so-called Mount Lyall's and Curtain-Davis' and other alluring names in connection with recent silver and copper discoveries in Tasmania. In June the slump came in all Tasmanian "stocks," and from that hour scarcely a mine has been taken up on the Melbourne market. Depression has hung over everything, which has driven the industrial and mining population away by thousands. In searching for relief—London became the cry. Bring in English captital. A rush was then made to take up claims which have been abandoned for years, and to peg out so called "deep lead" alluvial leases in thousands of acres, without the slightest regard to the ordinary precautions or probabilities which govern things. It was simply a case of being first in London. The speculators scenting that many of their projects would come to grief under Mr. Stirling's eye in London, resorted to a desperate game of belittling him and to put a stop to his going. Under the plea that a practical "mining man in touch with the share market" would be the right class of man to send, they have succeeded. I should be lacking in my duty were I not to advise extra precaution for the present in taking up the schemes that have been sent home. English capitalists should send their own experts out to inspect. The genuine things will stand investigation, and not one word said here will affect them.

Important Find North of Walhalla.

A correspondent reports that a splendid find has been made about a mile from Landy's Dream, north of Walhalla, by Messrs. Anderson and Roper, who opened up Landy's Dream. The find, which is one of the most important in the district for many years, is a new line of reef running north and south Three gold-bearing reefs have been found, all within 100 yards, and traced for over 2 miles. The eastern reef shows 7 feet of quartz, carrying splendid gold from wall to wall, the gold showing very freely in the stone, which when dollied gives a wonderful prospect of coarse and fine gold. The middle reef is about 4 feet wide, and also carries good gold all through. The western reef is a dyke formation; coarse gold is seen in the solid stone, but as little has been done, an opinion cannot be formed of its value. The new find is known as the "Walhalla Great Boulder." Already an offer, running into thousands, has been made for the property.

Long Tunnel Company.

The Long Tunnel Company at Walhalla will wash up for the month within the next few days. The dividend that will most undoubtedly be declared will be the 250th that the company has issued. As showing what the mine has produced, I give the following figures, dating from July, 1865, up to the end of August, 1896:—

Stone raised and crushed 452,034 tons.
Retorted gold obtained 618,355 ounces.
Amount in dividends £1,150,800.

As there are 2400 shares in the company, this is equal to £479 10s. per share, and as the present value of shares is nearly £100 it shows a condition of affairs never equalled by any other company in the world. Since November, 1892, £45 15s. per share has been paid in dividends. A proposal has been made to secure the attendance of Lord Brassey, the time being considered opportune for a gubernatorial visit.

New Find at Llanelly.

Mr. Moon, the Government Geologist for the Bendigo district, has visited the Llanelly find, near Tarnagulla. He states that the spur containing the shoot is likely to be limited. It seems to be leading to a well-defined body of stone lying close to the east, which at a little depth, there is reason to hope, will carry gold. Mr. Moon advises a thorough test of the reef, which outcrops on the surface for a considerable distance to the north. He considers that the rich gold found in the alluvial gully a few chains north proves the reef to be of a highly auriferous nature. The spur is still giving rich gold, excellent stone being got during Mr. Moon's visit. The quartz is of vitreous nature with ironstone face. The gold is chiefly associated with ironstone. The yield from 8 tons of rubble and loam from the Llanelly find is 11 ounces 10 dwts. The sale of the Phœnix Mine to Mr. Nathan, representing English capitalists, is reported. The sale of the Yorkshire Mine is completed, and operations will be commenced immediately. The Blac Horse Sandstone have accepted tenders for the erection of an additional 20 head of stampers and engine.

The Monarch at Harrietville.

At the Monarch Mine, near Harrietville, now owned by the English company working the Crescent and Harrietville Mines, under the management of Mr. Davey, the reef, which was last week reported to have run out, has been again struck, and is showing gold freely. Another crushing will shortly be treated, and although the lode is not so rich as when the first crushing took place, further rich yields are expected. Owing to heavy falls of snow in this and the locality of the Big Gun group, work has been interfered with to a great extent, and until warmer weather sets in development work cannot be proceeded with.

Bendigo Mines Output for August.

The amount of gold purchased by the Bendigo banks for the month of August, as reported by Mr. B. Berry, the sub-treasurer, was 19,463 ounces 19 dwts., against 17,223 ounces 5 dwts. in August, 1895, an increase of 2240 ounces 14 dwts. The following were the monthly purchases for the past five years:—

	1892. Ounces.	1893. Ounces.	1894. Ounces.	1895. Ounces.	1896. Ounces.
January.....	12,200 ...	14,310 ...	12,234 ...	10,943 ...	12,713
February ...	12,844 ...	16,177 ...	12,929 ...	11,706 ...	16,412
March	13,019 ...	15,670 ...	15,678 ...	16,723 ...	18,858
April	15,569 ...	16,487 ...	14,564 ...	13,483 ...	16,543
May	14,624 ...	15,630 ...	13,068 ...	13,574 ...	19,053
June	15,836 ...	18,291 ...	18,845 ...	17,695 ...	16,292
July	20,620 ...	21,846 ...	13,492 ...	13,822 ...	16,276
August	18,652 ...	19,132 ...	14,524 ...	17,223 ...	19,463
September...	19,550 ...	20,970 ...	15,043 ...	19,095 ...	—
October	18,371 ...	16,629 ...	13,710 ...	14,029 ...	—
November ...	16,856 ...	17,228 ...	14,286 ...	16,718 ..	—
December ...	25,235 ...	20,270 ...	14,915 ...	16,494 ...	—
	203,406 ...	212,636 ...	173,288 ...	181,505 ...	—

A New Find in Granite.

The fact that gold exists in various matrices distinct from the silica (quartz) in Victoria is becoming daily more patent, Mr. J. L. Irvine, has brought to Melbourne a number of auriferous specimens of unusual character. These were taken from the Grasshopper Mine, Sandy Creek, about 12 miles from the Huon-lane railway station, in the Beechworth mining district. The property is owned by Mr. Briddon and his son, both of whom are landowners in the locality. It is stated that there are three formations on the lease—viz., the Honeysuckle lode 13 feet wide, a dyke 25 feet wide, and the Grasshopper lode 4 feet wide. From the Honeysuckle reef 1489 tons yielded 2439 ounces, and this with primitive appliances. This is the free gold won. The concentrates from the Grasshopper are said to have been sold on the ground for £5 10s. per ton. The great peculiarity of the formations is that they consist of granite rock very highly mineralised, and showing gold freely. A little quartz is associated with the Grasshopper lode.

COAL FROM NATAL.—The Natal coal output for September falls below the record for August, but the East Lennoxton Colliery is not included in the return, and as that mine has for several months past been producing at the rate of about 900 tons per month, it is just possible that, when the return does come to hand, the September total will be, at least, not far short of the August record, even if it does not surpass it. September has, of course, a day less in the month than August, which in itself represents 600 tons less, so that for a 30 days' month the output, with an allowance for the East Lennoxton Mine, is actually, if not nominally, an improvement on the August output. Compared with the output of September last year, there is an increase of 55 per cent. The total output for the year up to the end of September is 158,663 tons, as against 115,133 tons for the corresponding nine months of last year, or an increase of 37 per cent.

WE are informed that Mr. Hamilton Carvill, M.P., Chairman, and Mr. L. Welstead, a director of the Kauri Freehold Gold Estates (Limited), left London yesterday evening to join the s.s. *Himalaya* at Brindisi on their way to New Zealand, with the object of inspecting the company's estates, and of collaborating with the local directors in carrying out the policy of the London board for the rapid development of the property.

INSTITUTION OF MINING AND METALLURGY.—The second ordinary meeting of the sixth session will be held on Wednesday, November 18, in the lecture theatre of the Geological Museum, Jermyn-street, S.W., at 8 o'clock, when the following paper will be read and discussed:—"Some Economic Features in Connection with Mining on the Witwatersrand Gold Fields," by Mr. Edgar P. Rathbone, M.Inst.M.M. (late Inspector of Mines, Witwatersrand).

MINING IN THE UNITED STATES.

California as a rival of South Africa.—A proposed extraction of $20,000,000.—Ore reduction to the fore.—The capture of Pittsburgh, Cleveland, and Chicago.—The Cripple Creek output—Gold mines in New York.—A survey of the Black Hills.—An agreeable Tomboy.

(FROM OUR OWN CORRESPONDENT.)

NEW YORK CITY, NOVEMBER 2.

WE are not disposed to readily yield the palm to your South Africa as a gold-producing country. We have a weakness, as you know, for "whipping all creation," and, like your own army, we don't and won't know when we're beaten. Accordingly we are not taken aback by the tale our United States Geological Survey expert, Dr. Becker, has just brought to us as one of the results of his recent extended study of the Transvaal region. He there met an American who was formerly his assistant in the Survey, and who is now engaged in mining in the Transvaal, where he has made several millions of dollars. This authority says that, to the best of his knowledge and belief, the gold belt, instead of being 30 miles long—the region now in sight—is practically 1200 miles long. The odd 1170 miles are, however, covered by later geologic deposits which have covered the gold formation. But he thinks this circumstance will merely delay instead of proving a bar to ultimate exploitation. Dr. Becker also reports that within 15 miles of Johannesburg, on what is called the main reef series, there is an amount of gold, practically in sight, estimated to be worth $3,500,000,000, so that if the remainder of the belt be of similar productivity, the great gold question is not much of a question after all.

But where do we come in, compared with this traveller's tale? Pray give me leave to tell you. We have in California a great gold belt named the Mother Lode, to which I have at various times referred in this correspondence. It is already well known for a length of 110 miles, reaching from the lower end of Mariposa County on the south-east to the upper extremity of El Dorado County on the north-west. A very conservative estimate by one of our leading authorities was published in the papers here some months ago, and gave $6,000,000,000 as the amount of gold "practically in sight" along the 110 miles. The same authority says that to the best of his knowledge and belief the granitic mass which has usually been regarded as the southern extremity of the Mother Lode is but a local intrusion of moderate width. He thinks the gold belt has been merely displaced, and comes in again somewhat to the west of its normal trend, continuing on through Southern California right to the Mexican frontier. He also considers that it extends north of El Dorado County, under the surface lava beds, through the remainder of California, and then on, across Oregon and Washington, to the Canadian frontier. If these views be correct (and there exist very many observed facts to support them), our Mother Lode is a gold belt having a length of, roughly, 1200 miles within our own domain, and extending far into the lands of our northern and southern neighbours. It need not fear comparison with the South African formation.

This aspect of the case is of practical importance, because a study of the problems involved has recently led to the commencement of operations having for their object the discovery and working of the gold deposits beneath the lava beds in the northern counties of California. The progress of this work should receive the careful attention of all engineers and capitalists interested in gold production. Not only will a continuation of the auriferous quartz veins of the Mother Lode be in all probability found, but it is in the highest degree likely that ancient gravels will be encountered comparable in richness with those that in mid-California yielded the abundant golden harvests of 1849 and the early 50's. The first decided "strike" will inaugurate a period of adventurous enthusiasm, but the difference, as compared with 1849, will be that the individual digger cannot operate, and must be replaced by joint-stock corporations possessing considerable capital.

If we may believe our newspapers, the secret is out respecting the Mariposa grant, about which I wrote you a week or two ago. Your great Rothschild-backed Exploration Company is said to have agreed to pay our Senator J. P. Jones and his partners, J. W. Mackay and Alvinza Hayward, no less a sum than $20,000,000 for the Fremont estate. But I doubt the story. I cannot believe the respective parties to the bargain to be so unequally matched in shrewdness, as such a sale at such a figure would prove. Nor can I believe that, in the face of such a record as was disclosed in the historical facts I put before you in my recent letter, the much extolled Hamilton Smith and his assistants will report the fair value of the property to be anything like $20,000,000. There are men here in New York, and also in California, who would engage to provide an equally extensive and valuable tract of gold mining land for 1-10th of that price. At all events, if, for some reason or other, your Exploration Company should be induced to make the disadvantageous bargain reported, it is to be hoped your public in general will not be tempted to rush in and relieve the buyer. I say all this, not because I have the slightest trace of personal interest, one way or the other, in the matter, but simply on account of the terrific blow that so gigantic a fleecing of your investors would strike for many a long year to come at the welfare of American mining.

Your issue of October 24th reached me a few days ago, and I was pleased to read your editorial, drawing attention to the opening for profitable investment presented in this country by the smelting and ore reduction industry. Scores of mining camps can be named which are able and willing to make millionaires for the men who choose to come forward and put up custom mills, reduction works, and smelters. The individual miner, as a rule, is not able to provide the requisite capital, and it is seldom that the miners in a camp are disposed to unite together in any business enterprise. Moreover, in order to conduct a smelting establishment to advantage, it is generally desirable to connect it by means of a branch line with the nearest railroad; and our railroad companies of late have been curtailing expenditure at every point. Hence a company or syndicate contemplating the erection and operation of milling, smelting, and reducing plants should be prepared also to build their own branch lines of railroad. This would both strengthen their control of the districts, and would sensibly augment their profits.

As for the general supply of power, heat, and light by the systematic utilisation of our coal fields, to which you also referred in your editorial, it is not easy to exaggerate the importance of the matter to the industrial community. If, as Professor Henry Wurtz long ago pointed out, the energy to be distributed is generated by the treatment of cannel coal, the products obtained in the shape of naptha, burning oils, lubricating oils, paraffin wax, phenols, cresols, and other articles will of themselves yield a very large profit, equal to at least $5 per ton of coal utilised, while the residium of coke and gas will provide

fuel for power and material for conversion into fuel gas for transmission to consumers. The cannel coals of the United States are abundant and neglected. The lands that contain them can be bought up at low agricultural prices. There is at the present time nothing to prevent an English company from stepping in and acquiring property which would command the whole industrial situation. A central station could be secured with 100 years' supply of coal, and so situated as to enable the great Pittsburgh district to be furnished with power, heat, and light, while, if it were thought expedient so to do, a second Pittsburgh could be developed on the southern shore of Lake Erie, where the Lake Superior ores might be converted into iron and steel, and this iron and steel into rails and other merchantable forms, under conditions which would effect a vast saving in transport, in addition to an economy of more than 50 per cent. in the cost of energy. It is not too much to say that from such a vantage point the entire trade of Canada could be captured. Cleveland and Chicago also could be made customers of the corporation almost as readily as Pittsburgh. And the object-lesson thus exhibited would educate the industrial chieftains of every civilised country in the world. Human labour and superintendence would become tenfold more efficient than is now the case. The art of utilising instead of wasting the greater portion of Nature's stores of energy would be learnt, and men would no longer need to devote their whole time and strength to the mere provision of food, clothing, and shelter. No greater triumph for the close of the present century can well be proposed than would be the inception of such a beneficent revolution in the workaday world, and not the least merit of the alluring picture is that instead of being merely a bright vision, it represents what is practical and practicable in the most prosaic and matter-of-fact sense.

The production of the Cripple Creek district for September seems to have been 16,500 tons, having an aggregate value of about $1,000,000. October will show a still larger output. The estimate for the whole year is hard to make. During the first six months production was lessened by the closing down of the Portland and Independence, and is generally figured at about $4,500,000. Since then a considerable increase has taken place by the addition of many small mines to the shipping list, and by the heavy production of the Gold Coin, Anaconda, Ironclad, and Gold Crater, as well as by an augmented output from the Victor, Elkhorn, Anchoria-Leland, and Moon-Anchor. A reasonable calculation seems to be that the camp's record for 1896 will reach $10,000,000. In 1895 the figure was $8,000,000; in 1894 it was it was $4,500,000; in 1893 it was $2,500,000; in 1892 it was $600,000; and in 1891 it was *nil*. If, indeed, anyone in 1891 ventured in the Denver mining circles to suggest Cripple Creek as a possible gold field, he was laughed to scorn.

I arrest the course of my sarcastically-inclined pen. I ask myself whether these wise men of Denver, who were so egregiously "out" in their judgment of the auriferous possibilities of Cripple Creek, were really more foolish or more ignorantly "cock-sure" than the rest of mankind. Would not almost every man in New York laugh to scorn the suggestion that paying gold mines may be located in Broadway? Yet it is none the less a fact that, when the Fifth Avenue Hotel was built, the borehole for its artesian well yielded fragments of rich gold-bearing quartz. It is also a fact that when the subterraneous chambers were excavated for the blowing up of Hell Gate, in 1885, some very rich specimens of gold ore were obtained. And within the last three months a considerable lodge of rock, assaying from $5 to $20 per ton, has been discovered not many miles from New York. Probably, we shall never see a gold mine actually in Broadway itself. The surface alone is of greater value than an ordinary gold mine. But it is well within the bounds of practical probability that we may yet see deep shafts and levels sunk and driven in the ancient rocks of Manhattan Island, and that gold in paying quantities may be extracted therefrom.

A good deal of prospecting, of which the public hears but little, is taking place in the Black Hills of South Dakota. The permanency of the great Homestake Mine has raised hopes of similar ore bodies being discoverable elsewhere on the same geological horizon of the singular district in question. Accordingly, we are all pleased to learn that Professor Wolcott, who is directing our Geological Survey in so masterly and public-spirited a fashion, has dispatched his trusty lieutenant, S. F. Emmons, to the Black Hills to make a preliminary investigation and determine whether or not a complete survey and report are practical and advisable.

The sale of the Tomboy Mines at Telluride, Colorado, seems to have really taken place. In April, 1895, the property was purchased by the late owners for $100,000 with a partial payment down. At the end of the calendar year, or about nine months after the purchase of the property, the production had amounted to $800,000, of which $600,000 was nett profit. The owners erected a mill of 150 tons daily capacity, and systematically developed the property to one of immense magnitude, with ore reserves estimated above the rumoured selling price, so that a purchaser would take little risk for a profitable investment. The mine has paid, while being opened, dividends of $40,000 to $60,000 monthly. Telluride is a district of strong mineralisation, with large veins that continue with depth. The district has been producing liberally since its discovery, and offers great inducements to the investor.

Undeveloped veins can be secured on most favourable terms and at low prices. The greatest objections are the long winters and the distance from railroads, yet these are more than compensated by the permanency of the veins and the continuity of the ore deposits.

ROBINSON SOUTH AFRICAN BANKING COMPANY.

The following is the report of the directors to be presented at the first ordinary general meeting:—After making full provision for all bad and doubtful debts, and after payment of all charges and expenses in London, Johannesburg, and Paris, the nett profit amounts to £434,636 1s. 7d. An interim dividend of 6s. per share (or 5 per cent.) was paid on the ordinary shares in April last, amounting to £148,800, leaving a sum of £285,836 1s. 7d., which the board recommended should be disposed of as follows:—1 per cent. to be paid on £2,976,000 ordinary shares (to make up the requisite 6 per cent. dividend before another distribution is made), £29,760; 10 per cent. to reserve fund (on £256,076 1s. 7d., the amount of net profit, less 6 per cent. dividend on ordinary shares), £25,607 12s. 2d.; 20 per cent. to deferred shares (on the same amount), £51,215 4s. 4d.; and 4 per cent. additional on £2,976,000 ordinary shares, making a present dividend of 5 per cent. (or a total dividend for the year of 10 per cent., or 8s. per share) to ordinary shareholders, £119,040 (the dividend on the ordinary shares being paid free of income-tax); leaving a balance of £60,213 5s. 1d. to be carried forward to the profit and loss account for the current year. The dividend will be payable on and after November 17.

EAST RAND PROPRIETARY.—A circular has been forwarded to the shareholders explaining the meaning of the proposed Clause B mentioned in the circular of the 3rd inst.

MEETINGS OF MINING COMPANIES.

CONSOLIDATED GOLD FIELDS OF SOUTH AFRICA, LIMITED.

The ordinary general meeting of the shareholders in the Consolidated Gold Fields of South Africa (Limited) took place on Wednesday, at the Cannon-street Hotel, Mr. H. E. M. DAVIES (the Chairman of the company) presiding.

The SECRETARY (Mr. J. Prinsep) read the notice convening the meeting.

The CHAIRMAN said: Ladies and Gentlemen—Let me first express my regret that Mr. Thomas Rudd, who has presided at every annual meeting of the company since its inception, is not in the chair to-day, and more particularly for the cause which compels him to reside abroad during a considerable portion of the winter season. Mr. Rudd has always deservedly received your cordial support, and I trust that, however inadequately I may fill his place, you will extend the same consideration to me. I come before you for the first time as Chairman of the company under not the most favourable auspices, for I come with a reduced profit and bad markets. These points I will deal with later on, but let me at once say they are, in my opinion, entirely counterbalanced by the splendid position in which the Witwatersrand gold industry is to-day. With the exception of the year 1894-5, our profits during the year under review were larger than in any preceding year in the history of the company. In 1894-5 the profits were abnormally large, as explained to you at the time, partly by reason of the change of policy of the management in regard to deep levels, and partly because it happened to be a year favourable to realisation on advantageous terms. It must be obvious to you that until the company begins to draw dividends from its various mining interests now in course of development, the profits must fluctuate with markets, more particularly as we have no desire to throw away shares we believe of great intrinsic value, in time of depression, although there has never been a year yet when we could not sell. The day, however, when we shall begin to draw dividends from our properties is now approaching. The Simmer and Jack Proprietary Mines (Limited), already earning from £10,000 to £12,000 profit per month, will, in the course of next year, be crushing with its 280 stamp battery, to be followed during the year by the Robinson Deep, and in due course by other deep level concerns in which your company is interested. The policy of investing largely in deep levels we have no cause to regret—on the contrary, all the predictions of your management and the company's engineers, publicly made, have been absolutely borne out to date. Personally, I am not a mining engineer, nor have I ever been in Johannesburg, but "as all roads lead to Rome," so does most of the best information from the various experts, whose opinions are entitled to consideration, find its way to Old Jewry, and I am as convinced as a man can be by my own common sense of the absolute value of the deep levels of the Witwatersrand, and, in fact, that claim for claim, they are bound to come in line as regards value with the outcrop companies. I make very brief remarks on the subject, because Mr. Charles Rudd, whom you all know, and Mr. John Hays Hammond, our consulting engineer, will speak on the subject later on, and I claim for them your attention and confidence on the ground of their predictions in the past having been so accurately fulfilled. (Applause.) I do not think, however, we must ask a long speech of Mr. Rudd. Private reasons, on which I need not touch, but commanding our deepest sympathy, would, in the ordinary course, have amply excused his absence to-day, but, putting self on one side, he has yielded to the wishes of his colleagues to attend this meeting and emphasise his previous statements, to which so much value has been attached. If his remarks are brief, they will be none the less to the point, and Mr. Hammond, who has been at the Rand more recently than Mr. Rudd, will subsequently give you full up-to-date information in regard to the mines. While on the subject of deep levels, let me make one remark, however. We are called a deep level company, while, as a matter of fact, our largest holding is in an outcrop company—namely, the Simmer and Jack Proprietary Mines (Limited). Now as to markets. These we have no control over whatever; nor do we attempt to control them. When people wish to buy they do so, and when they wish to sell, it is equally at their option, and the rise and fall is generally accounted for by people being all either one way or the other—that is to say, all buyers or all sellers. When the Jameson raid was over, and President Kruger came so well forward to support the industry, I could see nothing to affect mine values in the future, and I can only attribute the recent fall which has occurred to the fact that during the boom of 1895 advantage was taken to float a good many concerns of more or less speculative value, which have, in the course of time, alarmed investors to the detriment of better classes of stock. In connection with this, I take some credit to our company, that, through the whole period, we floated no companies on the market, and to any near ones in the formation of which we joined we subscribed our *pro rata* proportion of working capital, and stand the racket of their turning out well or not. Speaking generally, beyond what I have said, I can see no cause to justify the fall in the better class mines, but it is obvious to everyone that it is impossible to sell in a few weeks what has been bought in a year or more, without heavy sacrifice in prices. We have seen periods of depression before, only to be followed by good markets, and surrounding circumstances being even, I venture to predict a good year for the Witwatersrand gold mines in 1897. The deep levels will have established their value by actual crushings, for several are now nearing the state of production, and the gold output per month will be largely increased. I must not trespass on this subject too much, because it is not my province, but I should just like to call your attention to favourable points which have occurred during the year, namely:—1. The reduction in the cost of labour. 2. The regulation of the liquor traffic; and 3. The improved security of titles, in all of which President Kruger has shown himself most favourable to the industry. The decision in the great cyanide case in favour of the gold mines has also an important bearing on the dividends paid by the various companies, and now we only want reduced cost of dynamite, and more satisfactory arrangements with the Netherlands Railway in regard to transport, to give us all we need to make the best of the mines. One word more before I leave this subject. Out of evil comes good and that terrible scourge, the rinderpest, has taught the Dutch farmer that the great backbone of the Transvaal is its mineral wealth, and I am sure that President Kruger and his advisers have, with their usual acumen, grasped this, and will prove themselves, as they have already given substantial evidence of, true friends to the mining industry, and gradually help to put it upon the soundest footing. In concluding my remarks on this subject, I may tell you that I have it on the best authority from South Africa that politics in the Transvaal are quietly settling down, and that the prospects of Johannesburg were never brighter than they are to-day. (Applause.) I cannot see, therefore, where the cloud is coming from, or how the awful predictions which we hear daily in the City at the present time from the mouths of the very people who, 12 months ago, could not too extravagantly laud the gold mines, are likely to be fulfilled. Turning now to the report and accounts, we have followed the custom of previous years, and laid the whole of our affairs before you in as complete detail as possible. When we changed the investments of the company, to a large extent from outcrops to deep levels, we fully explained and received your approval of our policy. We set before you to-day completed schedules of our assets. We have added reports from our engineers explanatory of them this year supported by the opinion of Mr. Becker. The map we enclosed with the report also gives you the exact locality of our investments. With all these details before you, there is little left for me to say. I have heard it said in regard to that paragraph in which we state that "the company's investments stand in the books at average cost or under, and all stocks stand at prices below those now current," that this statement is based on the prices ruling on June 30. I do not think we have before thought it necessary to go into details such as these, but special times require special methods of explanation, and to relieve the mind of any critic on the subject, I may say that this is not the case, and that the majority stand far below present market prices, and some of our more speculative investments, from which we hope to realise large sums as time goes on, actually stand in our books at no cost, because we have taken the opportunity in good times to write these down to nominal figures. Coming now to the accounts, the capital, as you will observe, has been increased during the year by 100,000 shares, which have been allotted to Messrs. Rudd and Rhodes and their nominees, converting them from creditors into partners—to my mind a most satisfactory arrangement. The sundry creditors, £864,000, are within £1000 of the item appearing in the balance-sheet of last year, and have, since the date of making up the accounts, been reduced to £35,000. Contingent liabilities are somewhat larger than last year, and are made up of liabilities on shares of the company's new deep level undertakings, and for which more money will be needed as time goes on, when the shafts now being sunk have intersected the reefs. The investments during the year, as compared with the previous year, have increased by some £400,000. Cash advances and sundry debtors make together some £829,000, as against £1,400,000 in the previous year, the difference being principally accounted for by the increase in the amount of the investments. I may say in regard to cash advances and sundry debtors, since June 30, £712,000 has been repaid of these amounts. Turning now to the profit and loss account, London expenses are less by some £2000 than in the previous year, while the expenses in South Africa have increased by almost an equal amount, bringing the total expenditure of the company, exclusive of cablegrams, for the year under review, to £51,703, as against £31,923 last year. The amount of £1,119,726 6s. 8d. realised profits (the method of arriving at which is fully explained by the auditors in their certificate), is the balance of profits realised during the year remaining after paying all our expenses and fixed charges, and after writing off considerable sums to make our holdings as sound as possible; indeed, I think it may be said that, in this respect, we have erred on the side of caution. (Hear, hear.) The nett result is that, after providing for all outgoings, we have an available balance, including the sum brought forward from last year, of £1,946,053 1s. 6d., out of which your directors recommend that a final dividend of 15s. per share be paid, free of income tax, and that the sum of £200,000 be placed to the reserve account, leaving a balance of £1,202,303 1s. 6d. to be carried forward to the credit of the current year. I do not know of anything else which calls for special comment, and, as after Lord Harris has seconded the adoption of the report and accounts, Mr. Charles Rudd and Mr. John Hays Hammond will address you on the company's assets and prospects, I will not detain you any longer; but if any shareholder would like to ask any questions after these gentlemen have spoken, I will answer them to the best of my ability. I now beg to formally move the adoption of the report and accounts. (Applause.)

The Right Hon. Lord HARRIS, G.C.S.I. (vice-Chairman), seconded the resolution. He remarked that when he was asked to join the board of this company—and he regarded it as a very great compliment that the honour should have been done him—he was bound, in the interest of both the shareholders and himself, to consider whether his experience in business affairs was of such a character as might be of benefit to the company, and it seemed to him that while his administrative experience had been largely in political matters, still, with an experience of that kind of administration, he might, if he were careful to give attention to the business, be of use to the shareholders. (Hear, hear.) The administration of a great province like Bombay, and of a large department like the War Office, necessitated a careful consideration of financial matters, and therefore he hoped he was justified in thinking his experience might be of use on this board. In his own interests he was bound, in the second place, to look very carefully into the financial position of the company, and the result of the inquiries which he made was entirely satisfactory. Thirdly, he had to consider—and this was in June last—whether the political position was such as might affect the shareholders' interests and the position of the company in South Africa; and, after a very careful consideration of the matter, he came to the conclusion that there was nothing in the political aspect at the time which need adversely affect intrinsic merits, and, therefore, cause him any apprehension as to accepting the offer made to him. There was only one condition which he felt bound to submit in accepting office, and that was that in future the administration of the affairs of the company and the direction of its policy in South Africa should rest with the board in London. (Hear, hear.) The answer he got to that was entirely satisfactory; and, as a matter of fact, it has been published both in the London and South African papers. In conclusion, he felt justified in mentioning two matters which just now might have an encouraging effect. Most matters in this world depended on experts, and none more so than mining. He thought it should encourage the shareholders and give them confidence in their expert adviser, Mr. Hammond, that his indication as to the date when the Robinson shaft would cut the reef had come true almost to the day. The other matter was that he had made every effort to find out if there was anything in the political situation at the moment which warranted the apprehensions that appeared to be affecting markets, and he had been unable to discover anything that warranted those apprehensions. (Applause.)

Mr. C. D. RUDD (who met with a warm reception) said: Ladies and Gentlemen—The Chairman's speech has dealt pretty fully with the affairs of the company, and Mr. Hammond, as you have been told, is present to-day to give you every technical information, or to answer any question which you may be inclined to ask as to the state of our mining properties. I have consented, at the wish of my colleagues, to address a few brief remarks to you to-day on the general condition of the industry in relation to the recent heavy fall in market values. I am leaving the day after to-morrow for the Transvaal, to look after your interests there; and should it be the general wish of shareholders that I should meet you next spring, I shall feel much more physically qualified, and also qualified as regards my knowledge of the mines from my own personal observation, to give you a full account of the company's prospects. (Applause.) You will acknowledge, I think, that I have always spoken to you plainly and unreservedly as regards the affairs of the company—(hear, hear)—and I shall attempt to do so in my brief remarks to-day. I wish that this and other companies could pay dividends, and provide the large amounts required for development work, unhampered by market fluctuations. Some think that the whole of their funds should be derived from the present direct profits of mining, but if you come to consider the vast amounts required by the Rand companies for dividends and new developments, you will find that those amounts would come to more than the present profits yielded by the mines in this early stage of the industry, so many of them not having yet reached the dividend-earning stage. We are, therefore, at present dependent for our funds, to a great extent, on market realisation. I was quite candid with you last year when I spoke on this question. I said: "I see that more than 9-10ths of the profit made during the year has been made by the steady development of your properties acquired three, four, or five years ago, and which we consider have now come to maturity, and have therefore been sold at a profit on your behalf." There is no doubt that mines like the Simmer and Jack and the Robinson Deep, in which we hold such vast interests, promise very large direct returns when they come to maturity; but, at the same time, the question will again arise with us when they do, whether it is better in your interests that we should realise portions of them as we go along, or hold them for dividends. It must be perfectly clear to you that when mines are capitalised at 5, 6, or 7 per cent., as most of these mines are when they come into yielding, it cannot pay us to hold them, but that it is better for us to sell and re-invest in other things, because the dividends which they yield could hardly enable us to pay the large dividends which we

are at present paying, and which we hope to continue. (Applause.) As regards our dependence on the market for funds, we are in good company. If you look into things, as I have done, you will find that both the banks, the steamship companies, the revenue of the Transvaal itself, and I will go so far as to say the general trade returns of South Africa, vary broadly but directly with the state of the share market, because they are dependent for funds coming from Europe into South Africa, which pass through channels such as our company. It is, therefore, interesting on this basis to consider the mining industry to-day in relation to the fall in the market, and to investigate how far such is justified and likely to last. The best guide I have found for fixing on various points is to look up the different criticisms and the different market scares which have occurred in the last month, and not to deal with the palpable absurdities which have been spread through the market, but to take hold of the reasonable criticisms, on which you are entitled as shareholders of this company, to hear our judgment and explanation. I think these can be divided conveniently into two classes—the technical or natural, and the political. With reference to the technical, or natural, aspect of the case, the main attack, of course, has been made on deep levels. If there is anybody responsible for deep levels I am. I have advocated them for the past four years, and in my speech last year I went into great detail as regards them. I claim that the statements I made last year have been fully borne out in three ways as far as we have gone. Firstly, by further expert opinions over and above what I quoted last year; secondly, by the experience and analogy of mines in other parts of the world; and thirdly, by the actual data obtained by ourselves during the year 1896. The first two of these will be dealt with fully by Mr. Hammond, and I will not usurp his province. As regards the actual data we have obtained during the past year, I will refer very briefly to them. The heads I raised last year were "the continuity or persistency in the formation of the reefs," "the dip of the reefs," and the "gold contents." Now, we have in our main shaft of the Robinson Deep, at 2000 feet, proved the continuity of the reefs to that depth. As regards the dip of the reefs, we have struck them at a shallower depth than we expected, proving that we have not been over-sanguine in this respect. As regards the gold contents, they are fully up to our expectations and to the yield of the parent company. (Applause.) Numbers of other mines, which I need hardly recount to you—the Rose Deep, the Durban-Roodepoort Deep, the Jumpers Deep, the Simmer and Jack—have shafts of 1000 feet or more, and have cut the reef during the past 12 months, all with equally satisfactory results. We have also the Bezuidenville borehole, which we put down on joint account with others, which cut the reefs in the same way more than a mile from the outcrop. Therefore, I consider that, as far as the data go, the continuity of the formation is proved as far as possible. The question of water in the mines and temperature were other points which I dealt with last year. With regard to this, I may say that expert evidence is all in our favour; and in the Robinson Deep we have no appreciable increase of temperature, and no serious water difficulties. I am told that one great objection to deep levels which the "bears" have used this year is that, so far as they have gone, they have not been a success. I can look back to De Beers, when I was Chairman of that company some 10 or 12 years ago, when we had to undertake underground mining when it was called a failure—when we had not actually succeeded—and I do say to-day as regards the mines that have been attacked by the "bears." The Geldenhuis Deep, for instance, was about the first a tempt there of underground mining, and I believe it is an open secret that certain mistakes have been made. The mine has not, perhaps, been laid out as well as it might have been, and the ore has been milled in bulk instead of sorting it, as is done in most other mines, and the yield has not been altogether satisfactory up to date; but the owners of the mine have allowed our own engineers to go and see what there is to be seen, and our reports on the mine are entirely satisfactory. Our experts tell me that the Geldenhuis Deep should be yielding just as good results as any of the surrounding outcrop mines in a few months' time. The Bonanza I should refer to with much more satisfaction. It has benefitted no doubt by the mistakes which have been made in the Geldenhuis Deep. With 20 stamps the Bonanza made a profit in September of £9000, and with 30 stamps it has increased its yield 50 per cent., yielding for October £20,000 value, and a larger profit than the previous month. Practically, it has eclipsed any outcrop company that has been started, and has been better worked than the Geldenhuis Deep. So much for deep levels. Another point that has been used as an attack on the industry is that the output has not increased as might have been expected. I can only point out to you that last year I called your attention to the fact that we could not expect any great increase in the output of 1896. It was a sort of hiatus between the maximum yield of the outcrop properties and the deep levels not being quite started; and there were other reasons why the returns were not quite so good. Political difficulties of the early part of the year did throw us back in the output, and disorganised the mines to a great extent, but the prospects of 1897, with the starting of some of the best deep level mines, lead me to believe that the output will go on increasing quite as fast as it has ever done in past years. It is said also there is a falling off in the yield per ton of gold. This I shall leave Mr. Hammond to explain, because he tells me he is going to do so. There is a perfectly clear explanation. There is no falling off in the yield of ore as we go down; the yield is identically the same as the average in the outcrop properties. The rinderpest, Mr. Davies has referred to. Whatever adverse effect the rinderpest may have on the general welfare of the country, it will compel extension of railways, and also compel the natives to come to work, which are two great things in favour of mining. As regards the political aspect, I am prepared to admit that the horizon is, perhaps, not quite so clear. It is said that the Government are inimical to the mining industry. This I do not believe, and I do not think there are any facts to justify the assumption. It is natural that there should be in any country a little suspicion or animus excited by such events as those which occurred in the early part of the year; that feeling we must live down. As regards the hostility of the Government at present, what have we to show it? We have quite the reverse. As the Chairman mentioned in his speech, they have given us the restriction of liquor to the natives. Such restrictive laws took no less than five years to carry through the Cape Parliament, and the Transvaal Government have given them to us voluntarily. They have given us active assistance in reducing the rate of native wages, and I believe they will still further assist us to reduce them. I may mention that the late reduction saves us in the Simmer and Jack Mines alone £1500 per month. As soon as there was any question about titles which were damaging markets—as soon as that was used by the bears on this side—our representative in the Transvaal waited on the Government and received direct assurances that the executive would at once put that matter right, and suspend any law about which there might be the slightest question as regards title. When an attempt was made to "jump" some of our ground, the jumpers were at once incarcerated and fined. We have the Law Courts in favour of the mining industry in the cyande judgment, and as regards the question of Sunday work, it is no doubt a very important one, but it is one which I feel certain will be settled on reasonable grounds. At the mines themselves we are not quite at one as regards Sunday work, but I am perfectly certain nothing will be done in this matter by the Government of the Transvaal beyond what is really right, or to unnecessarily interfere with the actual profits of the mining industry. (Applause.) Much no doubt is still wanted from the Government. We want railway facilities to give us cheap living, cheap coal, and cheap mining plant. I put railway facilities first, because that is the great thing we want. We also want cheap dynamite, and many other things. At the same time, I think the Government have done fairly well so far, and I believe that by constitutional and steady agitation, they will give us still more. (Hear, hear.) Now, I must not keep you longer to-day. In summing up the whole position, I think that the mining industry never was in a sounder position than it is to-day. (Applause.) We have in the Transvaal every natural facility. We have the best scientific assistance; we have, of course, gold got a standard value for our product, and to a great extent we now have, I think, a standard value for our ore. The central portion of the Rand has now been worked for some 10 years, and as after 10 years we arrived at what we call "the carat per load" in De Beers and Kimberley for diamonds, so we have arrived at a fairly standard value for our ore in the central portion of the Rand. Exclusive of those extremely rich mines in the Robinson group—mines which return from £30,000 to £60,000 a claim in profits, and under which we have many large holdings—we may say that the ore will yield on an average about 40s. per ton. The question now, in my mind, is how far, with economy and organisation, we can reduce our expenses. I think we are dependent for that, to a great extent, on the friendly co-operation of the Transvaal Government, and that we must do everything we can to obtain. I think I need not take up more of your time, but Mr. Hammond will go into the more technical questions as regards the mines and deep levels. (Applause.)

Mr. JOHN HAYS HAMMOND, on rising, was received with cheers. He said: Ladies and gentlemen—It gives me great pleasure to day to meet you, and to have an opportunity of presenting to you a few facts in refutation of the misrepresentations that have been made against the feasibility of deep level mining. You may have noted that these adverse criticisms have not come from mining engineers or geologists, and you may have suspected that, besides lacking authenticity, these reports, in many instances at least, have been inspired by not the most laudable motives. (Hear, hear.) *Verbum sap.* What is deep level mining as the term implies upon the Witwatersrand? A claim under the Transvaal Mining Law consists of a parallelogram of 150 feet on the course and 400 feet in the direction of the dip of the reef. Obviously, claims of that size, on account of the smallness of the areas, would not admit of profitable mining. Consequently the outcrop companies, so called, were formed by an amalgamation of a number of these claims, which also included some claims not on the outcrop, but contiguous to the outcrop claims in the direction of the dip. All claims not included in the outcrop companies located in the direction of the dip of the reef are known a deep level claims. Many of these deep level claims contain the reef at a vertical depth of less than 2000 feet—some, indeed, at depths of but a few hundred feet. The term "deep level," therefore, is not indicative of absolute depth. These depths are shallow compared with the depths of mining in other countries, but the term "deep level company" is useful when employed in contradistinction to a company working upon the outcrop claims of the reef. When we look back to the history of mining upon the Rand we wonder that there should have been any hesitatancy in the commencement of the development of these deep level areas. To the credit of the mining engineers of the time it must be stated that they fully appreciated the importance and great value of these deep level properties, but they were unable to procure the necessary capital for their exploitation. All engineers who have investigated the subject think that within the next few years the retrospect will be quite as interesting and instructive. We think we shall look back then with wonder at the temerity of those who to-day are indiscriminately condemning deep level mining. In working the outcrop companies, incline shafts are sunk upon the reef, whereas in deep-level mining it is necessary to sink vertical shafts to reach the reef before exploiting the ground. After the reef is once reached by the vertical shaft, the methods of mining are identical in the two systems. There is no difference in the exploitation of a deep level property from that of an outcrop property save the sinking of a vertical shaft to reach the reef, and extra expense incurred by reason of the heavier machinery required for the purpose. You may ask—Upon what grounds do we base our confidence in deep level mining? That brings us to the consideration of—first, does the reef formation extend to the depths contemplated in our mining operations? The answer to this question is most emphatically in the affirmative. The subject has been investigated by many of the leading engineers and geologists of the different nations of the world, and they are unanimous in the opinion I have just expressed. Mining engineers and geologists differ at times, as well as men of other professions, and the extraordinary concensus of opinion of this subject can only be explained by the fact that the geological and other evidence is simply irresistible. But, ladies and gentlemen, we do not depend upon geological theories alone, for we have proved, as Mr. Rudd has told you, the regularity of the formation by means of the Bezuidenville borehole, and the continuation of the reef to a depth of over 3200 feet. This depth embraces all so-called deep level mines up to a horizontal distance of 5800 feet from the outcrop companies. You will see that working deep level mines as against outcrop mines is a distinction in point of expense, which need not frighten any of us. There is nothing serious about it. It is a simple mining proposition—Will it pay to mine a deep level property? Then, I say, will it pay to incur the extra expense of sinking this vertical shaft to the required depth to reach the reef before beginning operations? This is a subject to which I will refer later on. Now, the next question for consideration is—Does the gold continue in depth? Very much has been said on this subject, but if you will excuse reiteration on my part, I will review it briefly. Taking the central portion of the Rand, with which we have chiefly to do at present, we find the reefs well mineralised for a distance of 10 or 12 miles, and we find, as far as developments extend in depth upon the outcrop properties and upon the deep level properties that the pay ore is persistent in depth. There is always more or less relation between the longitudinal extent of the mineralisation of a deposit and the extent in the direction of its dip, and having proved the continuation of the ore-bearing formation for such a great distance, it would be indeed an anomaly in the history of mining if the pay ore should be found to cut immediately below the present developments upon this section of the Rand. It is this remarkable persistency and regularity of the pay ore in its course along the reef, as well as in its downward course, that has given to the Rand its world-wide reputation for reliability. Again, geological reasoning is confirmed by the results of actual development. The latest information that I have received from the Rand is, as Mr. Rudd has told you, most reassuring on this point. (Applause.) I have been asked by Mr. Rudd to explain the decrease in the value of the ore per ton within the last few years, compared with the earlier history of the Rand. The facts of the case, briefly stated, are these:—In the early history of the district, owing to the very high costs of operations then prevalent, and owing also to the small batteries then used, it was not possible to make any satisfactory profit from working other than the very highest grade ores—in other words, the mines were picked. We have the same rich bodies to-day as are shown in our assay plans at the lowest levels of our property. But the economical conditions have greatly improved since those days, and it is our object to work as low-grade ore as possible, consistently with maintaining the required profits. You will appreciate the importance of this, because you will see that it not only enables us to work ore at a smaller cost, but adds materially to the life of the mine as well. I have pointed out to you in my last annual report, and frequently referred to the subject when I have had an opportunity of speaking upon the history and future of the Rand, that the ore occurs in broad patches, not in defined shoots, as in other gold-bearing formations, and that, therefore, we must appreciate the importance of having the development work well carried out in advance of the mill requirements; otherwise there is inevitable disappointment. The battery eats up, as miners call it, a tremendous quantity of ore, and it takes time to run your drives and open up ore reserves. We attribute the disappointments of many mining propositions on the Rand to the failure to adequately provide ore reserves as against the contingency of an occurrence of poor zones. Assuming, then, that the ore occurs in the deep level properties of a grade approximating to the value at present obtained in the outcrop properties, is deep level mining practicable? The chief obstacles to deep level mining—now I am referring to depths greater than those at present contemplated by any of your companies, say to depths of 5000 feet and 6000 feet vertically—are high temperature in the mines and the handling of excessive quantities of water which, sometimes under abnormal conditions, are encountered. Dr. Becker has fully considered the problem with regard to these factors, and I concur in his opinion, as do all the engineers of the Rand who have investigated the subject—namely, that the condition as regards temperature and water are exceptionally favourable upon the Rand. (Applause.) The history of mining upon the Comstock lode, the famous gold and silver lodes of America, is often adduced as an argument against the practicability of deep level mining on the Rand, but I fail to see any connection between the two. The conditions of the Comstock are briefly these:—The situation of the lode is in what is called by geologists a region of recent solfataric action—that is, of dying vulcanism. You might as well compare the Vesuvius with the Comstock as to compare the conditions of mining upon the Comstock with those upon the Rand. But even upon the Comstock, where I have seen the temperature over 120° in the levels, and where the water was fairly boiling out of the rocks, there were no insuperable obstacles to the engineer; it was not any engineering problem that compelled them to abandon working, but rather the fact that the ore bodies occurred in small pockets entirely dissimilar to those of the Rand, and, as these pinched out, naturally the mining was discontinued. That is the explanation of the cessation of mining on the Comstock, where the most adverse conditions obtained that I know of in the history of mining. Let us see now what is being done upon deep level mines in other parts of the world to-day. In Michigan ore is being profitably stoped from depths of upwards of 4500 feet vertically, and one of the companies which has had extensive experience in mining at these depths has started a shaft to intersect the reef at a depth of 5000 feet vertically, and to begin the extraction of ore below that point, although the value of the copper ore is not more than 24s. to 28s. a ton. So satisfied are they of the feasibility of deep level mining that they are undertaking sinking, preliminary to mining, from that depth, and no engineer who has investigated the subject has the slightest misgiving as to the success of that mining operation. Then at Pribram, in Bohemia, almost at your own door, you have an example of deep level mining. I had an opportunity of visiting the place a few weeks ago, and I found a very satisfactory state of affairs. They are mining at a depth of 3600 feet, and the temperature of the working is not over 76° Fahrenheit, but the temperature never rose to over 90°, even before the circulation of air was established by connecting the drives and shafts. I think you will admit that the engineering skill upon the Rand is able to cope with engineering problems solved in Michigan and Bohemia. (Hear, hear.) Now we come to the question—Will deep level mining pay? I shall answer this question by pointing out to you in what respect we know that deep level mining will be conducted at economical disadvantages contrasted with mining upon the outcrop companies. First, the cost of the deep level shaft, as I have previously pointed out to you, will involve extra outlay, and, of course, heavier machinery will be necessary in depth, but we have carefully examined the question, and we find that, allowing about £1200 per claim, where the company consists of an amalgamation of something like 250 claims, we shall more than cover the extra initial expenditure involved in the deep level mining. When I tell you that from some of these claims we expect to receive at least £15,000 profit, and from many of them £25,000 to £30,000 profit, you will see that it is not a very momentous or valid objection as to deep level mining. (Applause.) When the reefs are once reached the exploitation commences, and the extra expense connected with mining would be due to excessive temperatures and to the handling of great bodies of water, which conditions will not exist upon the Witwatersrand to the depth at present contemplated by your companies. However, these extra expenses may be summed up by saying that more power will be required, and more power means more coal, nothing more nor less. At the present price of coal this extra cost of power should not exceed 3d. per ton per 1000 feet of haulage, which is not a very serious matter. In the immediate vicinity of your mines there exist illimitable coal deposits, and, therefore, we think it is only reasonable to expect that by competition, which is bound to follow, and by the promised reduction of railway transportation, we shall get coal at a very much less figure than we are paying for it to-day; and we really expect that the item of coal will be less per ton of ore mined, when we shall require large quantities, than we are at present paying for it. The history of deep level mining universally shows a decided tendency in the decrease of the operating expenses. We are confident that the economic conditions of mining will improve; that labour will become cheaper, or, what is equivalent, more efficient; that the cost of supplies will be reduced; that the efficiency of mining and metallurgical methods will be increased, and we, therefore, confidently believe that we shall be able to mine at depths of from 3000 to 4000 feet, at an expense not to exceed that at present obtaining upon the outcrop companies. (Applause.) In fact, I am speaking as an engineer, and I wish to weigh my words carefully—it is our candid opinion that the working cost will be considerably reduced below those figures, which have by no means reached an irreducible minimum, even under the present economic conditions. (Applause.) In conclusion, I may only reiterate the very favourable opinion I have expressed of the future of the mining industry upon the Rand. That there will be some cases of disappointment we must apprehend; in fact, we foresaw such disappointment when in our last annual report we said:—"Unfortunately the confidence of the investing public has been in many instances abused; it is to be regretted by those interested in the welfare of the district that the investors do not exercise more discrimination in their investments." The same note of warning should apply to your investments in deep level properties, but we believe that there is no possible combination of circumstances, political or economic, that can ultimately prevail against the successful development of an industry of such undoubted intrinsic merits as is presented in the exploitation of the deep level areas in question. (Applause.)

The resolution was carried *nem. con.*

The CHAIRMAN then proposed "That a final dividend of 15s. per share, making, with the interim dividend of 10s. per share paid, a total dividend of 25s. per share for the year, be paid to all shareholders of ordinary shares of the company registered on Monday, November 2, free of income-tax."

Lord HARRIS seconded the motion, which was carried unanimously.

The CHAIRMAN also moved the re-election of the retiring directors, Mr. W. M. Farmer, Mr. J. J. Hamilton, and Sir F. B. Pollock.

Mr. THOMAS RUDD seconded the motion, and it was agreed to.

Messrs. Turquand, Youngs, and Co. were reappointed auditors of the company, and a vote of thanks to the Chairman and his colleagues, and also to Mr. C. D. Rudd and Mr. Hammond, concluded the meeting.

SANTA ELENA NITRATE COMPANY (LIMITED).

The seventh annual general meeting of the shareholders in the Santa Elena Nitrate Company (Limited) was held at Winchester House, E.C., on Tuesday, Mr. A. R. Robertson presiding.—In moving the adoption of the report and accounts, the Chairman said the prices ruling for nitrate had not yet gone up to a figure which would admit of the operations on the company's property being restarted. Under the combination scheme agreed to by the nitrate producers a mistake had been made which led to a glut of stock in the market. Under the circumstances, had they have gone on producing nitrate they would have made a heavy loss on the same, but by ceasing operations their loss had been minimised. Their stock of iodine in London was sufficient, if they did not produce any nitrate this year, to enable them to recoup the loss they had sustained in carrying over the stocks of last year.—Mr. T. R. Ruple, in seconding the motion, reminded the shareholders that although they had done no business and made no nitrate, still they had made alvas.—The resolution was carried unanimously. The retiring directors, Messrs. A. R. Robertson and T. B. Baptie, were re-elected, as also were the auditors, Messrs. Charles Ross and Co., and a vote of thanks to the Chairman and directors concluded the meeting.

BULONG MINING, TRAMWAY, AND ORE REDUCTION COMPANY OF WESTERN AUSTRALIA, LIMITED.

The first ordinary general meeting of the shareholders in the Bulong Mining, Tramway, and Ore Reduction Company of Western Australia (Limited) was held at the offices of the company, Worcester House, Walbrook, E.C., on Thursday, Mr. J. WHITE MELDRUM (Chairman of the company) presiding.

The SECRETARY (Mr. Newman M. Ogle) read the notice convening the meeting.

The CHAIRMAN said: Gentlemen—This meeting, as you are doubtless aware, has been called to comply with the statute which enacts that within four months of registration the first general meeting of shareholders shall be held. There are, of course, no accounts to present to you, as the short period which has elapsed since the formation of the company has been taken up in completing the legal transfer of our properties and concessions, and generally in devising measures for carrying into effect the objects for which the company has been formed. Dealing first with capital, which I may remind you is £150,000, the amount payable to vendors in cash and shares was £100,000, leaving for working capital £50,000. Of this amount there has been subscribed £25,000, the balance of £25,000 is held in reserve for future issue, if and when we consider it desirable. This company, as its title indicates, is intended to carry on various branches of industry in Western Australia, all we believe offering scope for profitable employment of capital, and, inasmuch, as we shall not be dependent on any one source alone for revenue, but, on the contrary, have at least four channels by which we hope to earn money, we shall, as compared with other companies operating in Western Australia, possess exceptional, I might almost say unique, advantages. As regards mining, we are the owners of two gold mining leases in the I.O.U. district, which has lately come into prominence as a productive gold field. These properties, together aggregating about 30 acres, are called, the one, the Last Chance, which is in the immediate vicinity of the town of Bulong, 18 miles from Kalgurli, the present railway terminus and centre of the celebrated Hannan's district, while the other is the Queen of the Lake, and is situated on Lake Bulong, four miles distant. We have every reason to believe, not only from the reports of the mining engineers who inspected these mines before the company took them over, but also from results of present workings that we possess in them very valuable properties. Developments so far have only been on a moderate scale; as, recognising the importance of the initial steps in opening up mining properties, we preferred to await the arrival in the colony of our managing director, upon whom will devolve the duty of selecting competent managers, and making all other necessary arrangements. As possibly the extracts from reports printed in the prospectus may not have been read by all of you, it may be of advantage if I state that as regards the Last Chance Mine these reports show that the property is situated close to others, from which very rich stone has been raised. That in one shaft at 70 feet several leaders were cut through, all of which yielded by assay from 1 ounce 10 dwts. to 3 ounces per ton. Latest information is to the effect that in the main shaft the mine shows signs of improvement below the 100 feet level—a very encouraging feature. As to the Queen of the Lake, there is said to be "a fine outcrop of a very strong reef which may be traced on the surface for some distance." From their proximity to the railway, the mines will have the advantage of moderate freights for stores and machinery. With a plentiful supply of water from the lake there should be every facility for economical working. Now we come to the tramway, for which we hold a concession from the West Australian Government. The line will be about 4 miles in length, and besides connecting the Last Chance Mine with the battery on Lake Bulong, it will be used for conveying the ores from other mines with which we hope to enter into contract for crushing. We are informed that there are no engineering difficulties to contend with, and that being so, the track should be ready for the sleepers and rails on their arrival. They are now about to be shipped, and negotiations are proceeding for the purchase of rolling stock and engines. As regards the ore reduction works, our battery site on Lake Bulong is said to be unrivalled in that part of the colony in the facilities it is capable of affording for efficient manipulation of ores. Mr. G. R. Fearby, in his report dated May 28 last, states:—"This is a splendid mill site, considering that you have 70 feet of fall to work on, and being all on the face of the hill you will only have to cut out at the different levels and graduate from one treatment to another. This will do away with all expense of handling the ore after it once enters the battery or mill." We have ordered a 20 stamp battery with steam power for 40 stamps, and this plant should be erected and ready for work within six months. That we shall have plenty of work for our battery we are assured there is very little doubt, as not only shall we be able to offer to other mines the great advantage of being able from our abundant water supply to crush all the year round, but the saving of capital through not having to provide batteries of their own must be a very important factor indeed. I may here repeat the remarks of Mr. J. J. East in his report on this subject:—"The ruling rate for public milling in this gold field is £2 per ton, a tariff which would give a profit of 30s. per ton under the advantages of railway haulage and battery treatment comprised in one management. On the soft ores prevalent throughout Bulong district a 20 head stamp battery should easily treat 30 tons daily, and this quantity can be supplied more than five times over by the mines already opened, and can be kept up for years to come." Now, as to our water right. This we consider one of the most valuable of the many privileges we possess. You are aware that in connection with gold mining in Western Australia the securing of an adequate water supply is of the very greatest importance, as without it batteries cannot be run nor can human life be sustained. So vitally important is it to the permanent success of the fields that the Government are about to spend many millions on a vast scheme for ameliorating the difficulties with which many of the mining companies are now contending. Happily for us we are very favourably situated in regard to this matter, and although I hesitate to say that our supply is inexhaustible, having regard to the fact that the colony is sometimes afflicted with droughts of a severe and prolonged character, yet there is no doubt that our advantages are exceptional, and we have no reason to believe that the following remark of Mr. Fearby is exaggerated. He says:—"You have the drainage of a lake that stretches as far as the eye can reach. At the present time (May 28 last) there are millions of gallons of water on the surface. By merely sinking from 5 to 9 feet you have the excavation flooded out by the inflow of water, and this water is very little impregnated by saline matter. I am confident that you will never be short of water for all milling purposes, no matter what plant you may erect on the mill site secured by the company." Again Mr. R. D. Thompson says:—"I am convinced that our water supply will be ample for a 100 stamp mill." Not only, therefore, have we the strongest grounds for believing that we shall have at all times a full supply of water for our battery, but that we shall be able, especially in dry seasons, to earn a considerable income by condensing and selling water to our neighbours, who may be less favourably situated. The board has appointed as managing director in Western Australia Mr. D. H. Braidwood, from whose personal knowledge of the district in which our operations are to be carried on, combined with his extensive practical knowledge of mining and general business qualifications, the directors confidently expect the best results, and with him is associated, as a local director, Mr. R. D. Thompson, an experienced mining manager. Both these gentlemen, I may mention, hold a large pecuniary interest in the company. Mr. Braidwood has just returned to Western Australia after a visit to London, during which your directors had the advantage of frequent consultations with him, and he is, therefore, fully posted up with the views of the board on all branches of the company's affairs. I have nothing more to say, gentlemen, except to express the opinion that the company starts on its career with every prospect of success, and to assure you that the best efforts of your directors will at all times be given to secure satisfactory results. (Applause.) I shall be happy to answer to the best of my ability any questions which may be put to me by any shareholder.

Mr. T. GRAHAM, in moving a vote of thanks to the Chairman, said from the reports read it seemed that they had got hold of a very good property.

Mr. MURRAY seconded the motion, and it was agreed to.

The CHAIRMAN briefly replied, and the meeting terminated.

COLENBRANDER'S MATABELELAND DEVELOPMENT COMPANY, LIMITED.

The first annual ordinary general meeting of the shareholders of Colenbrander's Matabeleland Development Company (Limited) was held on Tuesday, at the Cannon-street Hotel, Mr. C. C. CANNELL the Chairman) presiding.

The SECRETARY (Mr. J. Darie Pattullo) read the notice convening the meeting.

The CHAIRMAN said: Gentlemen—I presume you have all received a copy of the circular which was issued, together with the notice convening this meeting. The circular practically stated our position, and mentioned that the meeting would be, to a certain extent, formal, inasmuch as we have not received any accounts from Buluwayo for some time past, owing principally—in fact, I may say entirely—to the absence of Mr. Colenbrander, the managing director, in the field. We should not have held the meeting at the present time had we not been compelled to do so in accordance with our Articles of Association, which stipulate that we must hold a meeting in 1896. We stated also in the circular that our financial position was practically the same as it was when the extraordinary general meeting of shareholders was held on July 27 last. On the whole, the position is practically unchanged. We have really nothing to submit to you beyond the formal business mentioned in the notice convening the meeting.

Mr. G. A. WITT: You have learned from the circular and from the notice read out by the secretary that two of your directors retire by rotation. Both are eligible for re-election. One of the gentlemen is our worthy Chairman, Mr. C. C. Canneli, and the other is Mr. F. J. Dormer. Both of them, I can assure you, have the interests of the company very much at heart. They are both energetic and able men, and I am sure of the greatest value to this company. I, therefore, now formally propose the re-election of Mr. C. C. Canneli and Mr. F. J. Dormer.

Mr. H. PALMER seconded the motion, which was carried unanimously.

On the motion of Mr. GOWAN, seconded by Mr. GENT, Messrs. Hays, Akers, and Hays were reappointed auditors for the ensuing year.

The CHAIRMAN then formally moved that the meeting be adjourned *sine die*, and stated that the shareholders would be called together again at as early a date as possible, when the audited accounts would be submitted. At the same time the directors sincerely hoped that Mr. Colenbrander would be present to address the shareholders personally. He was quite sure the majority of the shareholders had read with great pride and pleasure of the distinguished services which Mr. Colenbrander had rendered, and, in fact, was still rendering to the Chartered Company. (Hear, hear.)

Mr. DORMER seconded the motion.

A SHAREHOLDER asked if the proposal to subscribe £5000 towards the expenses of the rebellion in Rhodesia had been abandoned.

The CHAIRMAN replied in the affirmative.

Another SHAREHOLDER inquired whether the interest receivable by the company on its investments was sufficient to meet all the company's outgoings?

The CHAIRMAN: Yes; more than sufficient.

The motion was carried unanimously, and the proceedings then terminated.

NORTHERN TERRITORIES GOLD FIELDS OF AUSTRALIA, LIMITED.

The first general (or statutory) meeting of shareholders in the Northern Territories Gold Fields of Australia (Limited) was held on Wednesday, at the offices, No. 3, Lawrence Pountney-hill, E.C.

Mr. ROBERT SMITH, who presided, explained that the proceedings were necessarily of a formal character, and, in giving some account of the company's inception, stated that it was incorporated with a capital of £300,000. No public issue was made, the whole of the working capital—nearly £75,000—being fully subscribed privately by 13 of the most prominent finance corporations of the City of London interested in Australia. Under an agreement dated July 9, and made between the Northern Territories Syndicate and a trustee on behalf of that company, the sum to be paid for the whole of the properties was £225,000, payable entirely in fully-paid shares, and these would be issued immediately the company's legal agent in Port Darwin had satisfied their solicitors that the transfers had been duly completed. The company was formed for the purpose of acquiring and developing certain properties in the Northern territory of South Australia, all of which had been favourably reported upon, and aggregating together 3700 acres in extent. Judging from the reports which had been made of the company's properties, the most favourable possibilities of future profit existed in connection with them. It was the intention of the board to develop some of the properties, and then to float them as subsidiary companies, retaining a large interest in their share capital.

A vote of thanks to the Chairman terminated the proceedings.

BURBANK'S CONSOLS (LIMITED).

The statutory meeting of the shareholders in the Burbank's Consols (Limited) was held on Monday, at the Cannon-street Hotel, E.C., Major D. Dean Pitt presiding.—The Chairman said the property acquired by the company was lease Block No. 2210, Coolgardie, known as Burbanks Consols, and consisted of 24 acres. The mine had been reported on very favourably by Professor Nicholas, F.G.S., the well-known Australian expert, who subsequently was appointed mine manager. Acting under the advice of Professor Nicholas, the directors had recently acquired two additional blocks, and so increased their area to 48 acres. The following two cablegrams had been recently received:—On November 3: "The main shaft is down 24 feet in soft ground, underlies; shaft has reached a depth of 37 feet, with the vein formation at the bottom of the shaft. Have driven crosscut 67 feet. Gold has been discovered outside our southern boundary; trenching; expect to strike reef." On November 7; "Refer to my cable of 3rd instant. Have found the vein on the southern boundary. Have not yet seen gold. The property covers an area of 48 acres. The reefs on the property amount in number to four. Reef proved for a length of 88 feet. Shafts (four) have sunk 187 feet. Two crosscuts have been driven 153 feet. Four costeans have been cut 80 feet. Developments are being vigorously prosecuted. Prospects are encouraging."—A vote of thanks to the Chairman concluded the meeting.

OCEANA CONSOLIDATED COMPANY (LIMITED).

The first ordinary general meeting of the shareholders in the Oceana Consolidated Company (Limited) was held on Tuesday, at Winchester House, E.C., when Mr. Henry Pasteur, who presided, said the amalgamation of the old Oceana Company with the African and Austral-African Companies had now been completed. The company was largely interested in mining undertakings in Johannesburg and the surrounding districts, and in farming land, railway, and mineral companies in various parts of the Transvaal, whilst their territorial assets comprise large holdings in the chartered companies of the Portuguese and Belgian sphere, and in their subsidiary undertakings. The company was provided with a large capital and ample means, and, therefore, with proper management and the rapid development of South Africa, they hoped to be able to render the shareholders, from time to time, favourable results of the working of the business. Although of late all African companies had met with many obstacles, one good thing which would result from the difficulties experienced was the construction of railways. It was gratifying to know that the mining industry in the Witwatersrand, in which they held several important holdings, was constantly improving.—A vote of thanks to the Chairman concluded the meeting.

SPITZKOP (LIMITED).

A general meeting of the members of the Spitzkop, Limited (in liquidation) was held on Monday, at Winchester House, Old Broad-street, E.C, for the purpose of receiving an account from the liquidator as to how the winding up has been conducted.—Mr. R. Norton-Dawson (the liquidator) presided, and stated that the accounts showed that the proceeds of the sales of the shares amounted to £2644, the sundry calls amounted to £29, and the cash received from the Spitzkop Farm to pay creditors to £1612, making the total receipts £4288. The expenditure included payments made to sundry creditors, £1596; the dividend of 7½d. per share on 40,687 shares, £1271; the payment of 1s. per share on 1428 shares allotted to liquidator, £71; law costs, £885; liquidator's remuneration, £356; sundry expenses, £42; and estimated law charges, printing, stationery, &c., £71 11s. 3d.; making a total of £4288.—On the motion of Mr. Bryan Church, seconded by Mr. Uphill, a resolution was passed approving of the liquidator's report and accounts, and a further resolution was also agreed to authorising the liquidator to destroy the books and accounts upon the dissolution of the company.

WASSAU (GOLD COAST) MINING COMPANY (LIMITED).

At an extraordinary general meeting held on Wednesday, at the offices, 147, Cannon-street, E.C., resolutions were passed altering the Articles of Association so as to conform to the regulations of the Stock Exchange, and to obtain an official quotation.

WILLIAMSON'S PIONEER AND DEVELOPMENT COMPANY (LIMITED).

The second ordinary general meeting of the shareholders in the Williamson's Pioneer and Development Company (Limited) took place on Wednesday, at Winchester House, E.C., when Mr. A. Bishop, who presided, in moving the adoption of the report and accounts, said he was sorry to say he had not a rosy statement to put before them. The claims they purchased were paid for in 37,500 fully paid shares, leaving 10,000 in reserve for the purpose of exploiting and working the mines. Unfortunately, Mr. Williamson, through ill-health, had been compelled to resign his position as manager in Buluwayo, and Mr. Alexander Boggie had been appointed his successor. Although on account principally of the Rhodesian outbreak no work had been done on the claims for some time, the directors had received very satisfactory reports from the manager, and they believed that when operations were again commenced the results would be very gratifying to the shareholders.—Mr. Graham seconded the motion, and it was agreed to.—The auditor (Mr. Elwin Hayes) was re-elected, and the meeting then terminated.

LA GUAIRA HARBOUR CORPORATION (LIMITED).

A meeting of the debenture-holders in the La Guaira Harbour Corporation (Limited) was held at Winchester House, E.C., on Thursday, Lieut.-General Sir Andrew Clarke presiding, for the purpose of considering a scheme of arrangement.—The Chairman, in moving the adoption of the scheme said the directors believed that if the resolution was carried the effect would be very beneficial to the holders of the debenture stock. In fact, already the marketable value of the securities had increased in consequence of the proposal. By the arrangement each holder of £100 debenture stock would receive £125 new 5 per cent. stock, and for the arrears of interest £30 of second mortage stock, so that the yield to the debenture stockholders would at present be £6 5s. per cent. in addition to anything which might be paid on the second debentures.—Mr. W. W. S. Scott seconded the resolution, expressing the opinion that the scheme would place the property, which was a magnificent one, upon a very much better footing.—After some discussion the resolution was put and carried, and the meeting then terminated.

GOLDEN PLUM CONSOLIDATED MINES (LIMITED).

The first annual general meeting of the shareholders in the Golden Plum Consolidated Mines (Limited) was held on Thursday, at Winchester House, E.C., Mr. S. de Lissa presiding.—The Chairman said the directors had not issued a written report with the balance-sheet, because they had thought that he could better explain the company's position by means of a verbal one. In consequence of the endless delays in getting the battery erected, and the subsequent failure of the first crushing, the company's capital had been seriously drawn upon, and in order to keep them going the Ramage Syndicate, the parent company, had taken up debentures to the extent of £3000. In regard to the prospects of the property, the Chairman read the reports of some 10 or 11 experts who had examined either the Golden Plum or adjoining mines. All of these were of a very favourable character. Should, however, the mine prove of no value, the Ramage Syndicate had promised to give the company another property in the Black Flag district. He then moved the adoption of the verbal report and the accounts.—Mr. Bell seconded the motion.—After a long discussion, Mr. Little moved as an amendment that the accounts be referred back to the directors for a report to be presented therewith, and that the meeting stand adjourned to a future date.—Mr. Fisher seconded the amendment, which was carried *nem. con.*, and the proceedings then terminated.

MIKADO GOLD MINING COMPANY (LIMITED).

The first ordinary general (statutory) meeting of the shareholders in the Mikado Gold Mining Company (Limited) took place on Tuesday, at the offices of the company, 79, Gracechurch-street, E.C., when Colonel Engledue, who presided, said the property was situated in Bag Bay, Shoal Lake, Lake of the Woods, Ontario, and consisted of 287 acres. The outcrop of the main lode when exposed showed a strong quartz vein 6 to 8 feet wide, and the general average of the assays made was 5 ounces of gold per ton of 2000 lbs. On being assured of the value of the mine a manager was appointed, and since August 12 last he had been vigorously developing the property. Several crushings had taken place at the Public Ore Reduction Works at Rat Portage, the results on each occasion being quite up to expectations. In addition to the main lode another reef had been discovered to the eastward, and assays of two samples taken from the formation gave about 15 ounces and 7 ounces respectively.—The meeting concluded with the passing of the usual compliments to the Chairman.

MINES CORPORATION OF NEW ZEALAND (LIMITED).

The statutory meeting of the shareholders of the Mines Corporation of New Zealand (Limited) was held on Thursday, at Winchester House, E.C., under the presidency of Mr. W. F. Orriss.—The Chairman said the efforts of the directors, in the first instance, were to secure the services of several influential men to act as their representatives in New Zealand and Tasmania, and in this respect they were very successful. The first property obtained by them was the Albion and the Albion Extended, which adjoined the well-known Hauraki Mine. Captain Hodge, manager of the latter, gave it as his opinion that the eight reefs known to exist in the Hauraki also traversed their property. The next property they took an interest in was the Ravenswood, which was situate in the Upper Thames district, and adjoined the Woodstock United Mine. The manager of the Woodstock believed that the main lode on his property passed through the Ravenswood, while in addition five other lodes had been found. The directors had also completed negotiations for the right to prospect, with the option of purchasing, an extensive property adjoining the Waihi Mine. To work the two first-named mines subsidiary companies had been formed, and the capital had been privately subscribed.—A vote of thanks to the Chairman concluded the meeting.

The secretary of the ISLE OF MAN MINING COMPANY (LIMITED) has sold 100 tons of this company's ore at £9 8s. 1d. per ton.

GOLD MINING IN BRITISH GUIANA.

(BY A CORRESPONDENT)

WHILE the question of boundary and limit of demarcation between the territory of Great Britain and Venezuela has been proceeding in the hidden channel of diplomacy, the development of the gold resources of the country has been advancing rapidly in the full light of day, especially in the north-west district of the colony, in the gold-producing region on the Barima River. The cautiously-minded, however, among that section of the public who do not at present take very much interest in the geographical and diplomatic distribution of the country, but merely regard that portion now under British control as a possible asset in the industrial balance-sheet of the British Colonies (Limited), is rather inclined to reflect as to whether there is any gold in the colony, and whether the popular belief in the Eldorado has not been more or less an utterly fallacious myth from the time of Sir Walter Raleigh to the present day; and, secondly, if the gold is there, will it pay to work it? That the gold industry, as a whole, is actually progressing is borne out by the returns issued by the Commissioner of Mines in British Guiana from the year 1884 to the present day, and among the mass of figures there contained, the following may be cited:—

In 1884 the total return was made at 250 ounces. For the three years, 1884 to 1887, the return was made at 18,693 ounces. For the three years, 1888 to 1892, the return was made at 229,968 ounces, and from 1892 to 1896 (to September 26, which leaves three months more of the year to run) they amounted to 581,291 ounces.

This year to September 26 the return is 56,754 ounces, which is a slight proportionate monthly decrease upon last year, which decrease, upon examination, may be taken to be probably merely the natural outcome of events. Almost up to the present day, very little has been done towards exploiting and developing the reef resources of the colony, and the quantity of gold that has been produced hitherto may be stated to have originated entirely from alluvial sources. This gold from alluvial sources may be also fairly described as having been entirely won by methods of the most primitive nature, and at the present moment British Guiana, as against the unlimited expectations and estimated resources, based upon it as a gold field, has probably fewer mining men of scientific attainments and technical knowledge contained within its boundaries than any gold-producing part of the world of any note.

As in the early days of the Victorian, Californian, and South African gold fields a sudden influx of skilled labour and improvements in methods of production are to be confidently predicted, as wherever gold, which philosphers would have us believe is a source of all evil, has turned up in any quantity, human nature is sure to collect over it; and, in fact, coincident with the vigorous exploitation which is now being carried on, this influx is commencing to take place, with the result that proprietors of gold-producing properties hitherto regarded by them as valuable solely on account of the alluvial gold contained therein, are now appreciating that the reefing and mining of many of their properties on a scientific basis is likely to considerably enhance the value of their possessions; hence, it is not probably an unwarrantable inference that the slight decrease of the returns up to September in this year is due to the fact that many people interested in gold finding are turning their attention, efforts and money, to the development of the reefs upon their properties, with the consequence that alluvial working has been to some extent shelved in the meantime. On the other hand, statistics and returns tend to show that placer mining in the colony has received a considerable impetus during the present year, prospectors perhaps coming to the conclusion that quartz mining requires an outlay of capital proportionate in dimensions to the expectations based upon the results, and which, therefore, constitutes, as compared with the cheap, rough-and-ready method of placer working hitherto in vogue in the colony, an expenditure of a more or less speculative nature. As in the case of other gold fields in British lands, subsequently proved and developed to a high level of success, local resources have proved inadequate to furnish the backbone of mining work in the shape of capital, and collateral interests locally have hitherto barred the way to any appeal for outside investment; to instance, notably the at one time flourishing sugar industry in the colony of British Guiana. The prime factor of objection apparently urged and put forward by sugar interests against the development of gold mining in British Guiana has been the cry that the new industry, if not strangled in its birth, will deprive the sugar estates of their labour, and which, it must be borne in mind, was to a very great extent of an imported kind; now, however, that the sugar interests are apparently, and at any rate for a time, quite unable to be self-supporting, the new industry is putting on a good front to supplant them and restore the pristine vigour of the colony by reason of the success attendant upon the appeal for outside capital being justified, to a great extent, by the successful start of one or more of the locally capitalised gold properties.

The old time scare of bad climate of the gold region had been so often and authentically refuted that some other bogie had to be bolstered up and put forward; this now takes the plausible shape of the prophetic ultimatum that the cost of mining in the country is to be fatal to profit producing; and no doubt in any country of a practically virgin nature, such as the whole of the mining districts in British Guiana, this alarm has been sufficient to deter many from even going to the length of putting themselves beyond doubt as to what are the actual facts of the case. According to the Acting Commissioner of Mines in British Guiana, the production of gold is not only increased year by year, but each successive year shows a multiplied result on the previous one, and from all it is possible to learn there seems no reason to anticipate but that this multiplication is likely to proceed. This to some extent satisfies many investors that gold is there; then follows by natural sequence our second query, as to whether it will pay to work it, or, in other words, what will be the cost of working it? In all quartz mining operations the three fundamental and elementary features of success or disaster may be noted in every gold field as water, fuel, and abour.

To deal with them catagorically, it may be noted, with regard to the former, that by a cursory glance at the map of British Guiana, it is probably one of the most evenly-watered countries on the face of the earth, and in selecting any particular districts it will be found that they are fed by innumerable creeks and tributaries of the main arterial water system; in fact, it would be difficult to locate a spot in the mining region of the country where water cannot be had in abundance wherever it would be possible to work an ore crushing mill.

Secondly, in the matter of fuel, the timber of British Guiana is beyond question among the finest and most abundantly produced of the world, and the experience of engineers now is that, with properly-constructed boilers adapted for the purpose, the timber for the purpose of steam raising is as good as can be desired. In most districts, and, generally speaking, two cords of wood at the most may be reckoned as the equivalent of a ton of good steam coal, and it has been proved by some of the pioneer English companies now investing capital in the country by the erection of mining machinery, that a cord of this wood can be cut and delivered at the mill site for a cost ranging between 3s. and 5s. per cord, so that, taking the outside figure, fuel equal to a ton of coal can be had for a cost of 10s.; this compares in favour of British Guiana with many gold mining centres. At the neighbourhood of the El Callao Mine, for instance, in Venezuela, which was for a long time known as one of the most successful mining ventures, a cord of fuel is stated to have cost something like 40s., and the fuel difficulties in Western Australia at present are well known to everyone who is interested in that country.

With regard to labour, it is not to be stated that the labour is equal to first-class white labour, but it is abundant in quantity, if of a somewhat mixed quality, being composed chiefly of negroes, with a sprinkling of coolies, Portuguese, Chinese, and Aboriginal Indians. Hence, therefore, it may be taken as an invariable axiom in British Guiana, as in every country where coloured labour prevails, that to command anything like success operations must be directed by white men of energy and education. The average wage for unskilled hands may be stated at about 2s. per day and rations found, which are to be purchased at low prices.

It is now the experience of mining managers that milling in the north-west district of British Guiana actually ranges in total cost from 15s. to 25s. per ton. Given these figures, it is competent to reckon within measurable distance some idea of the profit to be arrived at upon gold so won. In this respect, however, it is at this early day difficult to arrive at anything like conclusive figures, or to get results beyond question as given by actual sales of bullion. The general practice, and one which seems to give more or less universal satisfaction, being to rely upon samples of ore sent home for assay or to quote pannings made upon the spot, one trifling piece of stone (say) of 10 lbs. weight being made to do duty as a herald of expectations and dividends for a whole dukedom of country. Assays from such samples sent over to England have shown hundreds, in some cases thousands, of ounces to the ton down to a few grains, so that, beyond the fact that there is gold in the country, these tests do not further the information of the would-be investor. Pannings made on the spot by engineers and prospectors in the north-west district seem to point to an average of from 1 ounce to 10 ounces per ton, and the value of the gold to grade from £3 15s. to £4 2s. per ounce.

All the mining ventures in the north-west district which have been capitalised in the United Kingdom are in the very early days of their existence, and no statistics therefrom are at the command of the investing public, but as facts and figures are the only real means of satisfaction recourse must be made to results obtained by one of the locally originated companies which has attained a gold-producing condition—to instance, the Barima Gold Mining Company, situated on the Arakaka Creek, a tributary of the north-west district of the Barima River. This company was foremost in starting reef work upon any scale in this district, and it, therefore, had the usual difficulties to contend with consequent upon having to haul a 20 stamp mill and mining plant a distance of some 3 or 4 miles from the river side to their property through what is probably some of the thickest bush upon the face of the earth, and make a road for that purpose upon country of all sorts and conditions of gradients. This company, after successfully getting its machinery on to the ground and erecting it, started crushing this year, and the result of the four clean ups made was as follows:—

On August 6	..	459 tons	yielded	766 ounces.
„ September 9	..	1050	„	841 „
„ October 1	..	780	„	730 „
„ October 27	..	970	„	797 „

Whatever may be the prospects of this company with regard to their resources or capacity of ore, it is at least a fact that from the ore crushed by them up to the present date—viz., 3259 tons—there have been won an average of over 19 dwts., or practically 1 ounce per ton. This adduces to the conclusion that, presuming this company's cost of milling to be based somewhat upon the figures we have previously mentioned—*i.e.*, if an ounce of gold to the ton is put through at a milling cost (say) of 25s., and the sale of bullion on the basis of £3 15s. per ounce, it becomes evident that it is possible to work it at a profit in the case of that individual mine, and there is no reason, from the evidence obtainable, to believe that other enterprises, whose registered offices are in Great Britain, and whose interests are vested in the colony, should not some day be in a position to show results equal to the property mentioned, especially, perhaps, as some of these companies own properties which are located on or about the actual banks of the Barima River, and could get their machinery delivered by water almost up to the mill site without having to haul it through densely wooded country. In the case of other properties, however, not so advantageously situated, it is satisfactory to learn that besides the light railway track which has been laid down by the Barima Gold Mining Company, and the track which was graded some years ago for another line running almost parallel to the Barima Company's, and which was not finished, owing to the inability of the contractors to finance it, the Government also have taken up the subject, and a bill for a light railway from the Kaituma River to the Barima district to facilitate transport from the coast to the mines has actually passed the Court of Policy in Georgetown, so that the present difficulties of transport should be in the future accounted for in like manner as the other three components towards the success that we have previously discussed.

As a conclusion, then, we are inclined to the belief that with free milling gold of a high grade of value such as is reported to prevail in the north-west district of British Guiana, and moderate working expenses, the cautious investor will not be going too far to assume that the elements of success are contained in the British Guiana gold fields, of course with dependence upon able and competent management, and that these gold fields which have been in men's mouths from the days of Sir Walter Raleigh and Queen Elizabeth may some day rival in popularity the world-famed fields of Victoria and South Africa; at any rate, as the result will tend to the success of British Guiana as a colony of the British Crown, it is a consummation that may at least claim our sympathies and interest.

TAITAPU GOLD ESTATES (LIMITED).

Mr. W. A. Low, who has been managing the company's estate in New Zealand for the past year, having arrived in London on Monday, the 9th inst., the directors consider it will be the general wish of the shareholders that he should have an opportunity of addressing them as soon as possible, without delaying until the ordinary general meeting, when the accounts will be submitted. A special general meeting consequently will be held at Winchester House (Hall No. 25), Old Broad-street, E.C., on Friday, November 20, at 12 noon.

The BARIMA GOLD MINING COMPANY (LIMITED) are now paying the dividend on their 10 per cent. preference shares to September 30 last, so that the coupons on the bearer share warrants for which registered shares can be exchanged through the London agency shall all rank for dividend as from October 1.

DIRECT METHOD CONSIDERED AS THE FUTURE METALLURGICAL TREATMENT OF COPPER ORES, ARGENTIFEROUS OR OTHERWISE.*

By CHRISTOPHER JAMES.

(*Continued from page* 1422.)

American Methods of Copper Smelting.

NO greater contrast can be imagined than that presented by the slow practice of the British copper smelter, and the wonderful progress which the American metallurgist has made in copper smelting.

Ever aiming at increased quantities dealt with in one operation, he has succeeded in multiplying tenfold the amount of charge commonly dealt with in this country. Thus the water-jacketed blast furnace and the automatic calciners of the O'Hara type are pure outcomes of American progress and ingenuity, and the Bessemerisation of copper regulus, though an English invention, has been brought to perfection only in America. In fact, the British inventors were pooh-poohed and sat upon by our foremost metallurgists, and their enterprise was entirely crushed thereby.

The water jacket, the automatic calciner, and the converter will be described, therefore, as typical examples of American practice in copper smelting.

The Water Jacket.—The water jacket is a double-walled casing of cast or wrought iron, kept cool by circulating water between the two walls and this casing constitutes the only enclosing substance between the interior of the furnace and the out-side air.

The chief application of the water jacket is to clothe the sides of a cupola furnace, and, when the American water jacket is spoken of, a cupola worked by blast is always understood.

The earliest form of the furnace was a circular, slightly tapering shaft about 6 feet long, and an inside diameter of from 33 to 36 inches at the tuyere level, consisting of one continuous water jacket from the base to the charging hole. This shaft is surmounted by a hood, contracting towards the stack above, and rests upon a bottom plate, supported and kept free from the ground by four short pillars.

The tuyere openings and slag hole pass through the water jacket, and the water space is enclosed at these openings by cast iron rings, and the two shells of the jacket are held watertight to these rings by rivets.

The bottom is sometimes a fixed iron plate and sometimes two half-circular plates, hinged so that they may be allowed to open to let the material drop out from the inside. The bottom is bricked over on the inside or covered with a layer of brasque to form the hearth. But the water jacket sides have no protection except the layer of chilled slag, which naturally adheres to them and forms the practically non-conducting working lining of the furnace.

Such a furnace is capable of melting from 30 to 40 tons of material daily.

To increase the daily charge, a point of great importance to the American metallurgist, it is found advisable to alter the sectional form of the furnace, and, instead of making it circular, to make it rectangular or oval in section, for the reason that the distance between opposite tuyeres should never much exceed the dimensions given above, or the centre will never be hot enough. Thus, the power to increase the size of the circular form to admit of a bigger output, is limited. But when the rectangular form is adopted the width of the furnace, between the opposite tuyeres, can remain of the proper dimensions, and the size of the furnace increased by making it longer. In this way the capacity of a furnace can be raised until a smelting power of from 100 to 150 tons of ore treated daily has been reached.

Another advantage of the rectangular form is that the jacket can be built up in sections, one part of which can be renewed without disturbing the main portion.

The earlier water-jacketed cupolas were built on the same pattern as the old cupola furnaces, and had the hearth inside the furnace made in the form of a crucible, or well, to collect and hold sufficient metal to make a tap. In the most approved modern furnaces the well is a separate receptacle outside the furnace proper, and the molten material (metal and slag together) flows from the furnace the moment it is melted into this outside receptacle. Such a receptacle is called a fore-hearth, and this entirely prevents the formation of infusible accumulations inside the furnace, which lead to much trouble in their removal, as well as loss of output.

Perhaps the simplest form of fore-hearth is a rough rectangular box made of four cast-iron plates, set on edge on a cast iron base plate, mounted on wheels that the whole structure may be easily removed or replaced; there is a removable cast iron slag spout at one end and a vertical slot for a tap hole at the side. When the matte is low grade and plentiful, and thus likely to burn away the lining of the fore hearth, the tap hole should be situated near the end of the box furthest from the furnace; when the matte is scanty, or high grade, and thus liable to chill, the tap hole should be placed nearer the furnace that it may receive all the heat possible from the molten stream that is constantly entering the fore hearth.

In that case, much chilling results from the radiation of heat, and, in time, the chilled metal will gather on the sides to such an extent that the cavity becomes greatly decreased in size, and unable to hold sufficient molten metal for practical purposes. The fore hearth must then be changed and the crust metal cut out.

There is also a danger in this simple form of fore hearth of the slag carrying off shots of metal. The chilling of the slag makes it viscid, and in this state it does not so readily deliver the shots of metal as when kept hot inside the furnace in the old style.

These two drawbacks—the accumulation of chilled metal and the production of foul slag—are both avoided by the use of the reverberatory fore hearth designed by the author, and now in use in this country.

It consists of an elongated form of the ordinary Welsh reverberatory furnace, heated by a coal fire; this receives the molten product from the cupola at one end, and delivers the slag over a notch at the other end, the metal being tapped out at the side of the furnace. The tapping is always effected an hour sooner than the time required to bring the level of the metal up to the slag notch.

In this fore hearth the slag is kept molten and thin, and, having to traverse the whole length of the furnace, is made to deliver up every shot of metal, while the possible escape of the metal through the slag notch is entirely prevented by timing the tap.

The automatic calciner is a furnace in which the material to be calcined is stirred and turned over by rabbles worked by machinery instead of by hand labour.

This furnace does its work faithfully. A steam engine is not affected by those qualities possessed by workmen, and said to be derived from the eating of an apple in Eden, so there is no neglect, no scamping, the rabbling is steadily, regularly, and constantly performed, and the degree of calcination effected is, consequently, a maximum.

There are three forms of automatic calciners in use, which may be taken as typical—viz., the O'Hara, the Pearce's Turret, and the Brown's Horse Shoe.

The principle adopted in each of these is the same. A moving set of rabble heads is arranged so as to give a ploughing motion rather than the flapping one almost inseparable from hand rabbling. The production of dust is thereby almost entirely avoided. Devices innumerable have been from time to time suggested and introduced to collect and save the dust entering a works culvert. The automatic calciner solves the problem in the simplest possible way, by preventing dust from entering the culvert at all.

* A paper read before the Institution of Mining and Metallurgy.

The O'Hara is a long, straight furnace, with single or double hearths, in which a series of sets of rabble heads are dragged along by an endless chain. The heads in one set incline at an opposite angle to those in the next. The rate at which the material is moved whilst it is being turned over will depend upon the degree of inclination of the rabble head, and this can be adjusted at the option of the person in charge.

The Pearce Turret furnace may be described as a long, narrow hearth bent around a circle. The Brown Horse-shoe furnace is also annular like the turret furnace, the hearth proper is 8 feet wide in the clear and occupies about 4-5ths of the circles; the remaining 1 5th, disconnected from the heat of the furnace, is used to cool the rabbles.

These two forms of the automatic calciner are the best that have been introduced up to now.

The experience of the author leads him to say that one of these calciners will reduce the cost of calcining as carried out in the ordinary Welsh form of calciner to 1-3rd. At the same time it will bring about a more perfect calcination. By the ordinary calciner the sulphur is never reduced below 9 per cent. In the automatic calciner it would be reduced to 5 per cent.

Bessemerisation of Copper Matte.—It is to Messrs. Holloway Brothers, of London, that we owe the origination of the idea of applying the principle of the Bessemer converter to the desulphurisation of copper matte.

M. Pierre Manhès, of Lyons, subsequently developed the process and introduced it in America, where it has grown into the successful process of the present day.

The process depends upon the production of its own heat, by the combustion of those ingredients of the matte which it is intended to eliminate, principally the sulphur and the iron. The oxidised sulphur escapes as sulphur dioxide. The oxide of iron formed must be provided with silica to form a fusible slag.

The kettle, or converter, in which the operation is conducted is lined with a silicious material, and this is rapidly corroded by the fluxing action of the oxide of iron. After a limited number of charges have been blown in one kettle it must be removed for repair, and be replaced by another. In fact, that one kettle may be kept always at work three must be provided; thus, one in blast, one cooling down for a new lining, and a third, having been relined, is drying and warming up to be ready for action where the first one fails.

Manhès perfected converter would hold 1 ton of matte, and if this matte contained 50 per cent. of copper, it would be blown into copper in 60 minutes. The converters now used at Copper Queen Mine hold 3½ tons each, and will blow a 50 per cent. matte to metallic copper in 90 minutes.

It was thought at first necessary to use powerful blast engines to produce a high pressure blast, but they have successfully used low pressure blast in several of the American installations, so that a roots blower or ordinary fan will do to blow with, provided a sufficient body of air be blown through.

The weak points of Bessemerising are, in the first place, the destructive action of the oxide of iron on the silicious lining, which renders it necessary to fix up three kettles to keep one in use, coupled with the fact that all the material thus worn off from the lining is converted into a slag always too rich to be thrown away.

In the next place, there are the tremendous losses in copper entailed by the volatilisation of copper compounds during the blow, and, in cases where the process is used for argentiferous matter, the more serious loss of silver contents. For it is well known that these losses occur. American metallurgists acknowledge a loss of 3 per cent. of copper, and 5 per cent. of the silver present. And there is good reason to believe from careful experiments made in this country, and which show a loss considerably above these figures, are to be relied upon that, in fact, the American metallurgist does not care to acknowledge the full extent of his losses. It is worthy of especial note, however, that these losses only occur when metallic copper is produced. For it is found that when the process is arrested at the white metal stage, little or no loss of copper occurs, and certainly, no loss of silver whatever.

Some smelters have, therefore, used the Bessemerising plant, only to produce white metal, finishing the product in the ordinary roaster.

(To be continued.)

DIARY.

Monday, November 16.

Hit or Miss Proprietary, Winchester House, 12.
Robinson South African Banking, Lothbury, 12.
Transvaal Lands, Cannon Street Hotel, 12.
Whitehead and Sultan Gold Mines, Cannon Street Hotel, 12.
Cherubang Straits Development, Cannon Street Hotel, 2.
Waitekauri Extended, Winchester House, 2.
Cassidy Hill (Coolgardie), Cannon Street Hotel, 2.30.
Bayley's West, Winchester House, 3.

Tuesday, November 17.

Balaghat Mysore Mines, Cannon Street Hotel, 11.30.
Cottonwood River (B. C.) Alluvial, Winchester House, 12.
V. V. (Gwanda) Syndicate, 10, St. Helen's Place, 12.30.
Tin Ticketing, Tabb's Hotel, Redruth, 1.
Warstah Gold Mines, Cannon Street Hotel, 2.30.

Wednesday, November 18.

Golden Link Gold Mining, Winchester House, 12.
Komata Reefs, Winchester House, 12.
West Australian Mines Development Syndicate, Win. Ho., 3.
Institute of Mining and Metallurgy, Geological Museum, 8.

Thursday, November 19.

Gloucester Gold, Copthall House, 12.
Newport Abercarn Black Vein Steam Coal, Winchester Ho., 12.
Montrose Gold Mining & Exploration, Winchester House, 12.
La Campana Mining, Winchester House, 2.
Rio Tinto, Cannon Street Hotel, 2.
United Exploration, Cannon Street Hotel, 2.

Friday, November 20.

Scottish Australian Mining, Winchester House, 12.
Taitapu Gold Estates, Winchester House, 12.
Transvaal Exploring Co., Cannon Street Hotel, 12.
New St. Augustine, Cannon Street Hotel, 2.30.

PUBLICATIONS RECEIVED.

"Fifth Report of the Bureau of Mines." Printed by order of the Legislative Assembly of Ontario. (Warwick Bros. and Rutter, 68 and 70, Front-street West, Toronto.)

"Fuel and Refractory Materials." By A. Humboldt Sexton, F.I.C., F.C.S. 5s. (Blackie and Son, Limited, 50, Old Bailey, E.C.)

"British Guiana Mining Regulations, 1896." (C. K. Jardine Georgetown, Demerara.)

"Transactions of the Manchester Geological Society." Session 1895-96.

"The Engineering Magazine."

SCOTCH MINERS' WAGES.—A mass meeting of Scotch miners has been arranged for to-day (Saturday) at which resolutions will be passed demanding an immediate increase of 6d. a day. The masters view the situation with concern, having pledged themselves months ago to concede an advance when trade improved.

MR. STRAUSS, M.P., ON THE TIN TRADE.

AT a meeting at the Redruth Unionist Club, on Saturday, Mr. STRAUSS, M.P., in addressing a gathering of his constituents, devoted himself to a consideration of the tin industry. When they elected him as their Parliamentary representative the tin trade was in a terrible position; the supplies exceeded annually the requirements of the world by 10,000 tons; they had a tremendous stock in London and elsewhere, which was constantly increasing; and there were elements, and strong elements, at work, the objects of which were to depress the price. He need not give them any further proof of the existence of those elements than the fact that tin brokers actually came down there to oppose him, because they thought he might have liked to thwart their intentions, and that brokers and dealers' circulars which had been issued ever since had preached nothing but depression and lower prices, and all of which had been issued with a certain object. He asked them, as sensible men, what they would have done if they had been in his position. He naturally felt it incumbent upon him to do whatever he could in order to put their industry in a healthy position again. In order to raise the price clearly two ways were possible. One way was that he should go into the market, buy any quantity of tin at constantly increasing prices, until all his means were exhausted, until the constantly increasing production had swamped him and he should have been obliged to go into the Bankruptcy Court. The other alternative was that he should endeavour to put tin into a sound, naturally sound, position, so as to make it ripe for a rise at some future time. He had to deal with an over-production of 10,000 tons a year. In support of his contention that since the Unionist Government had been in office the tin trade improved, the speaker said the surest criterion of an improvement in trade was the exports and imports, and during the past 12 months both showed an improvement of from 8 to 10 per cent. over the previous year, an improvement which he believed was unequalled in the history of statistics, and so apart from any proofs which he could give them there was not a shadow of doubt that the expected improvement in trade had taken, and was taking, place. (Applause.) How far had this improvement affected tin? To a marvellous extent. The deliveries, which meant the consumption, had also increased in an unprecedented manner, and showed an increase on the consumption of tin of fully 10 per cent., or say 5500 tons, as compared with the previous year. (Applause.) This was one of the factors which they required, but then they had still to deal with an over-production of about 4000 tons, and whilst it lasted the price was sure to go down; it was a natural law which no man, be he ever so powerful, could permanently oppose. The price did go down, but the drop was accentuated and assisted by that element which wished for lower prices. It became his duty to ascertain in the interests of the Mining Division, believing that the drop was a natural one—and he believed he had better means at hand for ascertaining the facts than anybody else—at what lowest price the production in the Straits would not be increased, and, if possible, actually decrease, and from all the information he could gather, he came to the conclusion that the price would be somewhere between £55 and £60. He then made up his mind that it was of no use opposing the fall to that limit, but he equally determined that any attempt to put it lower should be frustated by himself as far as was in his power. He was not speaking boastfully, but to what every dealer on the metal market could speak, when he said that it was owing to his endeavours that the price did not reach those figures, but that the lowest they touched was £55. (Applause.) This increasing consumption was likely to continue now that American trade was reassured by the recent election. The Straits shipments showed an increase as compared to last year of (say) over 1500 tons, but they must remember that last year from 2000 to 3000 to 4 were stocked in the Straits and were shipped in the course of this year. The consequence was that there had already been a decrease in production of 3000 tons, and he could predict with a certain amount of assurance that they would find by the end of the year—always taking this 3000 tons stocked away into consideration—that the production in the Straits would be 4000 tons less than it was in 1895. (Applause.) They had to make good an over supply of 9000 tons; they had increased in their consumption 5500 tons; had decreased production 4000, and there they had arrived at the 9000 tons which they wanted; and, therefore, he had no hesitation in saying that the equilibrium was now reached. (Applause.) He would like to read them an extract from a letter he had received from his agents in the East, for he spent a considerable amount of money on being informed what was going on in all the mines in the Peninsula, and he had never been misled yet. The letter said:—"It is a fact that the average tin mine does no longer pay, and this fact is proved by the Government having again reduced the export duty on tin, and this time for all the native States. You will remember that on August 1 this year export duty was reduced, and from the first of this month it is further reduced $1 per chara, which is about 30 cents per picul, which practically means that tin can now be got 1 per cent. cheaper. The Government would certainly not have sanctioned such steps if they were not necessary for keeping up the production of tin, from which the native States derive almost exclusively their revenue. The export duty now remains at $ 0 per chara of 3 piculs. As regards production of tin during the next 12 months, it is, of course, impossible to form an idea, as there are too many factors which cannot be foreseen. If we take the total of exports drawn from the Straits within 12 months at about 45,000 tons, the principal question is, At what price these 45,000 tons can be produced? and we say that under the present conditions they cannot be got." There could be no reason to doubt, continued Mr. Strauss, that the consumption would go on increasing, nor that the production from the Straits was decreasing, and taking those together with the explanations he had given them, the result was that in future they would get less tin than the world required, and that, therefore, the stocks would greatly diminish. They might ask whomsoever they liked who was cognisant with the tin trade, and they would tell them that once the fact was established that their production did not come up with their consumption, the price of £50 would be considered ridiculously low and be far surpassed. Ever since 1892 the tide has been ebbing towards low prices, but they were now on the upward tide, and the tide was sure to rise again, gradually and slowly, occasionally disguised by waves which they might not understand, but the tendency would be upward as sure as he stood there. It was very easy for a broker or dealer to get to a lower level by making exaggerated reports of bad features, and by wheedling tin out of their friends and throwing it on the market, but it became more difficult when the features were against them, when the natural position was against them, and he might tell them that now that the natural position of tin was improved he did not mind what those gentlemen did; he should be able to cope with them. (Applause.) No doubt his remarks would be greeted by his opponents with "Oh, yes, Mr. Strauss is a nice prophet; we have had some of his prophecies before—didn't he say at Dolcoath that tin was going up within 12 months, and it has gone down." He would like to read to them what he did say at Dolcoath just 12 months ago. The paper from which he read was dated November 1. He said:—"If they looked at the figures they could almost calculate for themselves the time when the equilibrium of production and consumption would take place, certainly within 12 months, and probably sooner. He had no hesitation in telling them that it would be insane on the part of any dealer or syndicate to interfere with the price of tin until that desirable end was reached. He was sure it would be reached, and when it was there were enough means at hand to take advantage of the position and do everything that was possible in human power to get the price up to former levels again." (Applause.) A day or two after there was a meeting at Carn Brea, when he spoke in a similar strain. He said:—"Before they could speak with confidence of the higher price of tin they must first of all show, in order to have a firm basis, that there was no increase in the visible supply. At the end of May, 1895, there was an increase in the visible supply of nearly 9000 tons as compared with the end of May, 1894. If they looked at the last statistics issued on September 30, they would see that the increase in the visible supply was only about 5000 tons, so that they had converted the 9000 tons increase into a 5000 tons increase. He believed, and fully maintained, unless some stupid syndicate should commit some atrocious folly again these 5000 tons would drop to 3000 and 2000, and ultimately there would be no increase at all, the equilibrium being restored. That was the time they were waiting for." (Applause.) Now, did he or did he not say that the price within 12 months would rise. He said then distinctly that they must not expect to rise within 12 months, but that he fully expected in that time that the equilibrium would be reached. That he thought was an answer to the statements which had been propagated by his opponents. If he were not so modest a man he should admire himself for the accuracy with which he predicted the time. He said 12 months, and it was just 12 months because the equilibrium had just been reached. (Applause.) So much for tin; and coming to mining, what was the state of the mining industry when they elected him? The existence of Carn Brea, Tincroft, Wheal Basset, and South Frances was hanging in the balance. He maintained that, financially, their mines were never in a stronger position, for they had secured ample capital to work them, and were perfectly secure to tide over the difficulties which might still be before them for a short period. Referring to the Stannaries Abolition Act and the arbitration clause he said he had the assurance of the Lord Chancellor that if that clause, which was intended to work in the direction they wished, did not work satisfactorily, he would bring in another Bill more stringent and more in conformity with the ideas they all of them had on the subject.

Mr. JAMES WICKETT asked whether the production of tin in the Straits had been curtailed through the failure of any large mines, or whether the increased price of rice had had anything to do with it.

Mr. STRAUSS replied that there had been no failure of mines, for he had always told them that the area there was more or less unlimited, but the price months ago did not pay many of the mines to produce their tin, for rice, which was the chief food of the coolies, had risen nearly 50 per cent. The consequence was that wages, because rice formed part, had gone up, and made it a losing game for the mines.

Mr. WICKETT enquired what influence the return of Mr. McKinley, as the result of the American election, would have on silver, and would the low price of silver have an influence on the price of tin.

Mr. STRAUSS said it was a very complicated question, and one which he intended to deal with fully on another occasion. There was no doubt in his mind that if they had a very severe drop in silver it would for a short time be rather detrimental to the price of tin, but for a short time only because the price of food in the East was such that wages would go up. He did not believe that Mr. McKinley's victory would send the price of silver any lower, he was not speaking of a farthing an ounce, but he meant to an appreciable extent. From what he could gather from those more conversant with silver than himself, there was no fear of the victory sending down the price, so that there was no further fear from that most dangerous factor, silver. The price of 29¾ was quite low enough, and it was generally agreed that it would not have gone down to that point but for the famine now prevailing in India. (Applause.)

A vote of thanks to Mr. Strauss concluded the meeting.

THE MINERAL RESOURCES OF NEW MEXICO.

(FROM OUR OWN CORRESPONDENT.)

NEW MEXICO has an area of 122,444 square miles (*i.e.*, larger than the whole of the United Kingdom), with a population of less than 200,000. It was settled by the Spaniards in 1543; belonged to the Spanish Crown until 1821; and from 1821 it formed part of the Republic of Mexico until ceded to the United States in 1846.

The United States Mint reports credit New Mexico with a product of the precious and allied metals as follows:—

Year.	Gold.	Silver.	Lead.	Copper.
	$	$	$	$
1892	989,176 ..	971,832 ..	327,500 ..	41,952
1893	939,000 ..	523,700 ..	107,200 ..	30,000
1894	802,550 ..	214,060 ..	49,300 ..	13,600

The Government statistics for 1895 have not yet been published, being this year unduly late.

The foregoing figures show unmistakably the results of the fall in the price of silver following the closing of the Indian Mints, and the repeal of the Silver Purchasing Clause in the Sherman Act. They do not by any means, however, give a correct idea of the vast mineral riches and mining capabilities of New Mexico for the following reason:—

During the time that this territory belonged to the Spanish Crown—that is, prior to 1821—numerous grants of land, more or less extensive, sometimes including hundreds of thousands, and even millions, of acres, were made by the Spanish Crown to individual settlers of Spanish origin, and the confusion as to titles, resulting from these ancient grants, the vagueness of the description of their boundaries in what was then almost valueless desert, has led to such serious complications that by Act of Congress a Court of Private Land Claims has been created to straighten titles out, something after the style of the Irish Encumbered Estates Court, created in 1851. As the records are in Spanish, most of the claimants to or occupants of such lands are Mexicans unable to speak English, the ancient maps and descriptions by land marks, metes and bounds most rude and primitive, and documentary evidence of legal descent very scattered, if existing at all, it needed a special Court, with exceptional powers, to solve such a series of riddles, but they are making good progress.

The United States Mint report for 1894, in its chapter on New Mexico, says:—

"The United States Land Court, appointed during the last Administration, has settled the titles to many land grants that

were in doubt, and in many cases the alleged titles to vast areas were declared invalid, thus throwing open to the prospector and miner some of the most promising of the metal-bearing sections of the territory. In the north also very satisfactory methods have been adopted by some of the grant owners to give title at a nominal cost to the miner who would acquire and develop mining property on the grants."

A recent editorial in the *Denver Republican* shows that with the exception of the Maxwell grant and a few others, the land grants in the country (*i.e.*, including New Mexico, Arizona, California, &c.) derived from Mexico conveyed no right to mineral beneath the surface, which right was retained by the Spanish Crown, and so passed to the Government of the United States. The grantee has no mineral right superior to that of any other prospector or discoverer. The Maxwell Grant and one or two others are exceptions to this, the mineral right having been confirmed in the owners of those grants. Although the owner of a Spanish or Mexican land grant, with the exceptions named, cannot claim the mineral beneath the surface, it does not follow that the mineral area of such a grant is subject to location under the United States mining laws. The surface does not belong to the United States Government. It belongs to the grantee or owner of the grant. He alone has a right to enter upon the ground, and any one else entering for the sake of locating a mineral claim or for any other purpose is a mere trespasser, unless permission be given by the grant owners. Even the grant owner himself cannot locate the ground as a mineral claim, for the mining laws apply only to locations upon ground belonging to the United States. A mining claim cannot be located upon private property. From this it appears that there is no law by which, under the laws of the United States, title can be acquired to the mineral contained within the limits of an ordinary land grant. The owner of the grant cannot extract it, and he cannot give that right to any one else.

An effort to correct this was made in the 53rd Congress. A Bill was introduced in the House of Representatives by Mr. Antonio Joseph, the delegate from New Mexico, providing for the application of the United States mining laws to land grants, and also for a process of condemnation, whereby title to the surface would be secured through the payment of its value as assessed by a jury. In this way title could be acquired to the surface and also to the mineral beneath, and the mining interests of the land grant territories would not be retarded in their development by the fact that numerous grants cover their surface.

Unfortunately, this Bill did not become a law. It may, however, be practicable to secure its passage at the approaching winter session of the present Congress. It is of great importance that it be attended to, as New Mexico, which is the territory most burdened with these grants, is believed to contain a large amount of gold, but there can be little prospecting and practically no development on the land affected as long as the law remains in its present condition.

The above explanation largely accounts for the comparatively small annual output in the past by New Mexico of the precious and allied metals. In addition to such of the ancient grants, which have by the United States Land Court been declared invalid, and thereby thrown open to the prospector and miner, there is in the aggregate a very large area which was never covered by any of these grants. It is estimated that New Mexico altogether has a mineral-bearing area, more or less developed, of 30,000 square miles, this, of course, including the land covered by grants.

A brief notice of the leading mineral-producing counties of the territory—viz., Bernalillo, Colfax, Dona Ana, Grant, Lincoln, Santa Fé, Sierra, and Socorro may be interesting, but space will not admit of any reference to the great and valuable deposits of coal, iron, &c.

Bernalillo County, exclusive of the Navajo Indian Reservation, has an area of 7000 square miles, of which 5000 square miles are claimed to be mineral-bearing, including gold, silver, copper, and lead. Hell Cañon district has been partially opened up by a number of mines, in which large bodies of low grade gold and silver ore have been uncovered occurring in chloritic slate dykes, traversed by well-defined quartz veins. Little silver is found, but in the country to the north silver galena and lead are the principal minerals. Below the mouth of Hell Cañon are extensive placers only needing a sufficient supply of water for hydraulic mining. The La Madera and Sandia mining districts contain extensive deposits of iron ores with leads of quartz containing gold, silver-bearing galena ores, with iron and copper pyrites. At Las Placitas is a considerable district where placers have been worked by the Mexicans, in a primitive way, for a century or more with varying success. At San Miguel and Copper City are large deposits of copper ore. The Cochiti district practically dates from 1893, when surface rock sent to Colorado for assays proved to run high in silver and gold. A number of mines have been opened, but the progress of the district was retarded by title suits under old grants. The United States Land Court decided the cases in favour of Government ownership, and an appeal is now pending before the United States Supreme Court. Up to March last it was estimated that the district had sent to smelters 1550 tons of ore and to mills 925 tons. The need of the district is local means of extracting the gold and silver, so as not only to avoid expensive transportation, but to be able to handle the lower grade ores.

Colfax County comprises the larger portion of the Maxwell grant, which grant, as before mentioned, carries with it the minerals. On this grant the Old Baldy district is a considerable gold producer. The oldest and best known of the lode mines in the Ute Creek district is the Aztec, which is said to have produced over $800,000 in gold. It consists of a large vein occurring on a contact of quartzite and black slate, the crevice between walls varying from 8 to 20 feet in thickness, and being remarkable for continuity. This ore is all free picking, and can, therefore, be taken out at a cost of $1 per ton. Large ore bodies have been opened up on this mine, which run not less than $10 per ton in free milling ore, besides what passes over for concentrating. In addition to the main body of ore, there are a number of vertical fissure veins from 4 to 10 inches thick and much richer. There are a number of other good mines in the same district, and similar instances could be given of properties in adjacent districts.

Dona Ana County has in the Caballo Mountains mines producing lead ore carrying silver, and others producing gold. In the Portrillos, copper properties; in the San Diego Mountains, free milling gold ore; and in the Organ Mountains, deposits of ore carrying native silver, the developments as yet being only shallow, the extent of the total output of the county for 1894, according to the United States Mint statistics, being only $29,0[illegible].

Grant County, in the south-western portion of the territory, and bordering on Old Mexico, has probably a greater number of mines in actual and profitable operation than any other county. The oldest district, that of Santa Rita del Cobre, has been worked more or less since 1808, and is rich in copper. The Pinos Altos district has a number of large and well-defined gold-bearing ledges, some of which have been successfully operated for nearly 40 years; also a large silver mine. The Hanover district, besides being rich in copper, has gold-bearing formations. Cook's Peak is mostly a heavy lead and silver district. The Central district contains good mines carrying both gold and silver. The Blackhawk district has several mines, all containing native silver. The White Signal district is principally gold, as also is the Gold Hill district. Many of the mines in this county are hundreds of feet in depth with extensive workings. In the county there are at Hanover a small smelter and a mill, at Deming an ore sampling plant, and other plants at various points.

Lincoln County, for lack of railroad communication, has not yet been developed to any great extent as a mineral producer, although the Old Abe Mine, near White Oaks, has long been a gold producer. White Oaks is said to be situated in the centre of a mineral belt 100 miles long, carrying gold, silver, lead, copper, &c. So far, practically, all the development has been done by local capital. The deepest workings—over 1000 feet—are on the North Homestake, while the developments on other properties range from 700 feet deep to mere prospect holes. For the treatment of these ores there are two 20 stamp mills, one 10 stamp mill, and three Huntingdon mills. The treatment consists of simple plate amalgamation and no concentrating. The Bonito district shows lead and silver ores and free milling gold ores. Prospecting in the Jicarilla Mountains has recently led to encouraging results.

Santa Fé County is historically one of the ancient mining sections of the territory, and has an important mineral district around the settlements of San Pedro, Golden, and Dolores, containing placers partially worked, and in a very crude way, by the Spaniards as far back as 1711, and before that time by the Indians. One expert reported that "if sufficient water was placed thereon, these placers could be made to yield $1,000,000 in gold per year for over 23 years." In the mountains above the placers are quartz veins carrying gold, opened up by a number of mines, also partially opened deposits of copper carrying gold and silver in paying quantities; and there is also a belt of 5 miles square carrying lead and silver. The whole district is comparatively undeveloped. The writer was personally informed by the present Governor of New Mexico that during 1895 not less than $500,000 worth of turquoise was mined, of which over four-fifths came from Santa Fé County, and the remainder from Grant County.

Sierra County, according to the United States Mint statistics for 1894, was the leading producing county in the territory, with $283,600. It possesses several rich mining districts around Chloride, Kingston, Hillsboro', Hermosa, Grafton, Kingsbury, Fairview, &c., producing gold, silver, copper and lead, an individual description of which would occupy too much space. There are in this county quite a number of mines in operation, and several small mills. Professor F. A. Reynolds claims that in portions of Sierra County are found conditions identical in every particular with the mineralised formation of Cripple Creek. He says that Hillsboro' has an immense placer field where, as at Cripple Creek, the gold is found disseminated throughout the disintegrated and decomposed metamorphic rocks, which, yielding to time and the dissolving effects of water and heat, have scattered their elements over a large area of country, and have impregnated the loose strata, carrying the harder underlying formations, with gold in such quantities that with proper appliances for the working of this field, it would pay handsomely. He also says that Hagan's Peak, a sharp volcanic cone, presents many features of interest to one who has seen the Cripple Creek formations. The peak is composed almost entirely of rhyolite porphyry, and its sides are thickly strewn with andesite breccia, among which can be found huge boulders of quartzite. This mass of rhyolite and andesite appears to be cut by dykes of diorite and other harder porphyries, and along the lines of these contacts mineral exists.

Socorro County, 170 miles long by 100 miles wide, is also a prominent mineral county, where the first attempts at practical mining commenced in 1655 by a Spanish explorer—Marguerito Luero—and are evidenced by many old workings at various places. For instance, in the San Andres range of mountains is an old Spanish mine, first discovered in 1655, from which many and rich shipments of gold were made until 1712, when the Indians revolted and drove the Spaniards away, and, as was their custom, filled the mine and covered it up, to avoid ever again being compelled to work in it. The original stone cabin, with its quaint portholes for defence, is still there, and the mine is now being cleaned out. The Spaniards conducted their mining operations successfully in various parts of the territory until in 1712 large numbers of them were massacred by Indians rising in general revolt, the survivors retreating to San Nicolas, Old Mexico. The mines were not again worked to any extent until 1861, and from that time until 1880 were operated only in a desultory manner, owing to the sparse population and lack of railroad and other transportation facilities. The various mining camps of the county are known as Kelley, Magdalena, Mogollones, Black Range, San Mateos, San Andres, Oscuras, Ladrones, Water Cañon, and Socorro. The extent to which mining is carried on is evidenced by the fact that in this county there are three smelters, with a capacity of 600 tons per day, four stamp mills, five concentration plants, and two other smelters in course of erection.

The foregoing are the leading mineral-producing counties of the territory, so that a similar notice of the remaining counties, such as Taos, Rio Arriba, San Juan, San Miguel, &c., is not necessary. Sufficient evidence is given above to show that over a great area of country in the territory of New Mexico are extensive gold fields, both in placers and veins, also silver, copper, and lead deposits awaiting the coming of those who have the means to bring the mineral to the surface. It is true that some of these mineral-bearing areas are as yet remote from reduction plants or railroads. It is also true that in many places large quantities of the ore are of so low a grade as to prohibit shipping, and to render local means of treatment absolutely necessary for their profitable working. It is equally true that many mines would be highly profitable with the erection of local ore treatment plants. New Mexico presents, among others, the favourite propositions of low grade, and large bodies of free milling ore. The lines of the Atcheson, Topeka, and Santa Fé Railroad, the Southern Pacific Railroad, the Denver and the Rio Grande Railroad, and their branches now furnish the necessary railroad facilities to many districts. But the great need all over the territory is capital in the hands of practical men. Most of the mining sections have already been prospected sufficiently to enable a practical man to form a judgment as to where and how to invest. For that reason, New Mexico fully merits personal investigation, and should no longer remain comparatively overlooked. Another fact should also be borne in mind—viz., that in New Mexico there are no deep snows to interfere with work during the winter season.

In conclusion, the following "shocking example" may be quoted as a thing to be avoided. Several years ago, a certain small group of private, and apparently inexperienced, capitalists in England heard of a mining property in New Mexico, and employed as experts an engineer of considerable experience in English coal mines, who had never been in America, and a professor at a college in one of the Eastern States, who had never been west of the Missouri. On the advice of these two eminent experts they acquired a mining property in New Mexico, and also erected a plant for treating the ore, the total amount expended being about $350,000. Results proving absolutely unsatisfactory, the writer was finally communicated with by the English capitalists, and on his recommendation a thoroughly competent English mining engineer, resident in Denver, of many years practical experience in Colorado and the West, was sent to inspect the property and plant. He reported that the experts originally employed had been in error as to the geological formation, had over-estimated the quantity of ore, besides mistaking its character, and that the costly plant erected was absolutely useless. He therefore, advised, the English capitalists to enter up their outlay to date to "profit and loss."

Manifestly, such a failure cannot be charged to mining, for the same imprudence and incapacity would have the same result in any other business.

THOMAS TONGE.

CORRESPONDENCE.

We wish it to be understood that we do not hold ourselves responsible for, and do not necessarily endorse, the opinions of correspondents. All communications must be accompanied by the names and addresses of the senders, though these need not necessarily be published.

RELATION OF GOLD REEFS TO PLACERS.

TO THE EDITOR OF "THE MINING JOURNAL."

SIR,—Reverting to the mention of this colony by your correspondents, "Yeller One," in your issue of August 8, and "Oro," in that of October 3, I would say that the gold here is derived from several sources.

The colony has been visited, in the early part of this year, by probably one of the most eminent authorities of the day—viz., Professor Dr. Arzruni, from the Mining College of Aachen (Aix la Chapelle). He considers the formation entirely free from volcanic agencies belonging to the Archaic Age. The country rock, or greenstone, he calls "gabbro."

Owing to the heavy tropical rains and closely wooded nature of the country the subsoil is much and deeply decomposed, and the gold is washed into the ravines or gulches forming the waterways and called "Creeks."

In the Barima district there are a great number of rich reefs and veinlets (in some cases they assay as much as 100 ounces to the ton). These becoming decomposed, the gold is carried off and deposited in the gravels of the creeks, and fairly large nuggets are frequently found there, many of flat shape and with sharp edges, pointing to their origin as reef gold.

In the Potaro and Conwarook districts, on the other hand, reefs are certainly known to exist also, but the gold here appears to have been derived mainly from the country, the "gabbro" forming immense deposits infiltrated with gold carrying pyrites, running from 1 or 2 dwts. up to several ounces to the ton.

The heavy rains causing decomposition here also appear to have oxidised the iron and set free the gold, which is much finer than in the Barima, and generally mixed with titanic iron, known as "black sand."

If these deposits can be worked to pay by the aid of the many falls and cataracts, and the use of electricity, then the richness of British Guiana will surpass the dreams of avarice, and Great Britain should do well to pause before recklessly yielding up a country, which in wealth would beat the Transvaal, on such a bogie as the Monroe doctrine, or the idle threats of so-called friendly but impotent States.—I enclose my card, and remain, Sir, yours faithfully,

RALEIGH.

British Guiana, October 23.

THE SCOTTISH AUSTRALIAN MINING COMPANY.

The following is from the report of the directors to the shareholders at the half-yearly general meeting:—Lambton and Burwood Collieries. The progress of colliery work during the half-year under review has been interrupted by labour disturbances at the Newcastle collieries. In their last report the directors stated that the very low price at which New South Wales coal was being sold operated beneficially in the direction of increasing the demand for it in intercolonial and foreign markets. This had caused a large quantity of shipping to arrive at Newcastle, in the early part of this year, to take coal cargoes, thus giving the prospect of a steady output of coal for some time at the various northern collieries. Unfortunately the miners' leaders, not recognising that this increase of shipping was caused by the low prices at which the vessels were contracted to be loaded, thought that it afforded the miners an opportunity for obtaining an advance in the hewing rate, and accordingly such advance was asked for. It was impossible for the colliery owners to grant this increase in wages, as the price of the coal to be supplied to the vessels was already so low as to leave little or no profit on the cost of raising and shipping it. Negotiations between masters and men were set on foot, and a conference was held in April last to consider the whole question, under the presidency of the Premier of New South Wales, when the views of both sides were thoroughly discussed, the masters offering the inducements of continuous employment and undertaking not to reduce wages before the end of 1897 provided there was no strike meanwhile, also offering the men to confer with them again at the end of the year, and, if the state of trade and the price of coal permitted, the masters then to entertain the question of increase of wages. The miners rejected this offer and went out on strike. This company's Burwood pit was closed on the 25th of April last. The Lambton pit, for the reasons stated in the directors' last report, had already been closed since the 2nd of March last. Very soon after the strike had commenced it was found that the wants of consumers could be supplied from other districts. Consequently no rise of any importance took place in the price of coal through the action of the miners in the Newcastle district. Towards the end of June the men began to perceive that the strike was futile, and to make overtures for the resumption of work. After further negotiation an arrangement was arrived at, and the men returned to work upon terms slightly less favourable to them than those offered at the conference of April last. The collieries were reopened on July 15 last. The board very much regret this disturbance of the trade at a time when it was promising to grow into greater volume and prosperity, but they consider that they consider that the representatives of the various collieries acted wisely in resisting the demands of the colliery men. Mr. F. W. Turner, your secretary, arrived in all time at an opportune moment, and took an active part in all that passed, especially devoting himself to co-operating with your manager, Mr. T. Croudace and the other colliery representatives in bringing about a united course of action to meet the difficulty that had arisen. In consequence of the cessation of work during a large portion of the past half-year the sales of coal from Lambton amounted to only 14,785 tons, and from Burwood to 42,459 tons. Mr. T. Croudace, the general manager, took the opportunity afforded him by the enforced cessation of work, to make some desirable improvements in the underground arrangements at Burwood. He reports that the company's railway, rolling stock, machinery and plant have been maintained in good working order, and that a very careful economy is being studied in all departments of business under his charge[illegible]

LATEST FROM THE MINES.

CABLEGRAMS AND TELEGRAMS.

APPANTOO GOLD.—During the month of October mill crushed 320 tons quartz, yielded 152 ounces gold.

ARMADALE.—The following cablegram has been received from our consulting engineer, Mr. Frank Nicolas:—"Cyanide plant delivered on the railway at Fremantle."

BIG VALLEY CREEK.—The following cablegram has just been received from the resident managing director:—"Foreman reports: The tunnel is now in 670 feet. Bed rock not yet reached. The gold contents is increasing. The gold is coarse."

BROKEN HILL PROPRIETARY.—Advices to hand state that 29,485 tons ore were treated for the four weeks ending November 12, and that the output from the refinery was 388 ounces gold, 651,827 ounces silver, 1790 tons lead, 35 tons antimonial lead, and 223 tons copper matte, containing 41 tons copper, and 20,854 ounces silver. Buyers quotation in Melbourne for Broken Hill Proprietary Company shares on the 12th inst. was £2 8s.

BONNIE DUNDEE.—Cablegram from the managing director in Charters Towers:—"The No. 3 (vertical) shaft has reached a depth of 1575 feet from the surface. We have cut a formation with a reef 16 inches thick of poor quality. It is difficult to say, at present, what reef we have cut. It is dipping east."

BRILLIANT AND ST. GEORGE UNITED.—The following cablegram has been received from the directors in Charters Towers:—"Have crushed (during the month) 1728 tons of quartz for a yield of 2105 ounces of gold, approximate value £375. Have declared monthly dividend of 9d. per share, payable on Saturday, the 21st instant."

BROKEN HILL PROPRIETARY.—Cablegram received:—"The Broken Hill Proprietary Company (Limited) has declared a dividend (No. 111) of 1s. per share, payable on December 16, the company's books for which will be made up on the morning of December 2."

BARBERTON ESTATES.—A cable has been received by the Paris agency from Johannesburg reading:—"Have struck large orebody, third Eureka level 7 feet wide, average assay value 17 samples 16 dwts. per ton. Victory lode opening up well, prospects are encouraging, advise London."

BLOCK B LANGLAAGTE.—Production for October: By cable: "Mill. Stamps running, 75; ore crushed, 7784 tons of 2000 lbs.; Gold retorted, 1892 ounces.—Tailings—cyanide process. Tons treated, 4730 tons of 2000 lbs.; gold recovered, 501 ounces.—Concentrates—cyanide process. Tons treated, 181 tons of 2000 lbs.; gold recovered, 354 ounces; total gold recovered, 2750 ounces."

BONANZA.—A cablegram has been received from the head office, Johannesburg, stating the following results for October:—"From mill. Crushed 4020 tons; obtained 3793 ounces of gold.—From cyanide works. Treated 3000 tons, yielding 2404 ounces of gold; total 6197 ounces of gold."—Note. On Oct. 15 additional 10 stamps were dropped, making 30 stamps at work.

CASSEL COAL.—A cablegram received gives the output for the month of October as 31,510 tons; profit, £6973.

CITY AND SUBURBAN.—Last month's crushing yielded 967 ounces. New Heriot 6006 ounces. Salisbury Gold Mining Company 1650 ounces. Battery stopped nine days for connecting new engine. Great Eastern Co lieries (Limited), profit for October £2400.

COROMANDEL (India).—A cablegram has been received from the mine, dated 10th inst., from Mr. Llewellyn, the superintendent, on his return from England, viz.:—"Arrived here yesterday. Much pleased with the appearance of the bottom of the mine."

CROWN REEF.—Cablegram received from Johannesburg:—"Output for October: Yielded in smelted gold from 120 stamp mill, 6917 ounces; yielded in smelted gold from 120 stamp cyanide works, 4305 ounces; yielded in smelted gold from slime works, 348 ounces; total, 11,570 ounces."

CHAMPION REEF (Nannine, W.A.).—The manager, Mr. Dunstan, telegraphs under date November 9, as follows:—"Main shaft down 184 feet. Have struck strong well defined vein 3 feet 6 inches thick, running parallel with main reef."

CRIPPLE CREEK CONSOLIDATED.—The manager reports under date October 29 as follows:—"The rock is growing much harder, and the talc looks very bright and lively. The work is being done steadily, and the vein is improving with depth, both in value and size."

CENTRAL QUEENSLAND LAND CORPORATION.—A cablegram has been received from the managing director, advising the sinking of trial shafts on the gold-bearing fissure lodes recently discovered on the property. The lode is improving with depth, and assays of the ore show highly payable results. The directors have completed purchase of 800 acres, having deep water frontage to Port Curtis, 44,000 acres of farm land on railway line, and several town allotments.

CROWN REEF.—Results for October, received by cablegram from Johannesburg:—"Working results for October. Number of days working 120 stamp mill, 27 days 10 hours. Crushed by 120 stamp mill, 15,745 tons. Yield in smelted gold from 120 stamp mill, 6917 ounces. Yield in smelted gold from 120 stamp cyanide works, 4305 ounces. Yield in smelted gold from slimes' works, 348 ounces. Total, 11,570 ounces.—Working expenditure. 120 stamp mill, cyanide works, and slimes'works, 15,745 tons milled.—To mining, transport, milling, cyanide, treatment of slimes, general charges, maintenance, and mine development, £22,408.—Revenue. By gold account, 6917 ounces from 120 stamp mill, £23,636; 4305 ounces from 120 stamp cyanide works, £13,575; 348 ounces from slimes' works, £1200. Total, £38,411. Profit for month, £16,003.—Revenue per ton crushed, £2 8s. 9·50d.; cost per ton crushed, £1 8s. 5·56d.; profit per ton crushed, £1 0s. 3·94d."

DURBAN ROODEPOORT DEEP.—A cablegram received states:—"A reef has been found, second shaft, result encouraging."

EMMA.—The following cablegram has been received from the manager of the Post Office property in New South Wales:—"Have driven in chute of ore 10 feet. The average thickness of the quartz is 2 feet, assaying 15 dwts. per ton. The face improves as we go on. Have begun driving."

ELUDINA GOLD.—The following cable information has been received from the mine manager:—"Crushed 150 tons No. 3 shaft, 302 ounces."

FRONTINO AND BOLIVIA.—The directors have received a cablegram from their manager, giving the result for the month of October as follows, viz.:—"Produce, £10,200; costs, £5630; leaving a profit of £4570."

FERREIRA.—Copy of cablegram received from Johannesburg, giving result for October:—"Crushed 10,538 tons. Bar gold extracted 8679 ounces. Concentrates caught 220 tons. Assay value of concentrates 6 ounces 15 dwts. fine gold per ton, equal to (say) 1485 ounces.—Cyanide works. Bullion produced from tailings 3140 ounces. Total gold from all sources 13,304 ounces."

FRONTINO AND BOLIVIA.—The directors have received a cablegram from the manager by which they learn that the profit for October was £4570.

GEORGE GOCH AMALGAMATED.—The following cable is to hand advising work done during October:—"9034 tons crushed, yielding 2123 ounces gold, and 1605 ounces from tailings."

GELDENHUIS DEEP.—The following cable has been received from the mine manager, Johannesburg:—"Mill ran 27 days, crushing from mine 15,227 tons, and from development dump 493 tons; yield, 3542 ounces; cyanide treated, 9500 tons, yielding 1975 ounces; mining profit for month, £440."

GRASKOP.—Return from the mine for the month of October:—Ore treated 191 tons, yielding 185 ounces of gold. Total yield January 1 to October 31, 2148 ounces.

GREAT EASTERN COLLIERIES.—Cable dated November 10:—"Have declared a dividend of 5 per cent. payable to all shareholders registered on November 18. The books will be closed from November 18 to December 8.."

GELDENHUIS ESTATE.—Copy of cablegram received from head office, Johannesburg:—"Reading. Last month's (October) profit was £7842 10s."

GREAT REEF.—The following cable has been received:—'Started crushing a few days ago. Mill running well."

GREAT SOUTHERN TIN AND GOLD.—Cable from the mining manager:—"All the machinery on the ground; pipes will be completed, and will commence sluicing November 19. Mining prospects very good."

HANNAN'S LODE.—The following cablegram, dated November 9, has been received from the company's managers, Messrs. C. J. McCulloch and Co., Kalgoorlie:—"No. 1 shaft, 19 feet crosscut on the 100 feet level. South-west 20 feet lode shows a marked improvement.—No. 3 shaft. Distance driven in crosscut since is 69 feet.—Connolly."

HAURAKI.—The directors have received the following telegram from the manager—viz..: "Total amount of ore crushed during the month, 320 tons; ounces of gold bullion produced, 2077. The approximate cost is £1850; profit, £4500. Stamps boxes changed; working admirably."

IVANHOE.—Cable from Melbourne, dated November 10:—"Have started 15 stamp mill November 6, everything running smoothly. Have secured water rights, a total of 50 acres. Depth of shaft 130 feet. 7000 gallons of water per 24 hours."

JUMPERS.—A cablegram has been received from the head office, Johannesburg, stating the following results for October:—"Crushed, 12,030 tons; obtained from mill, 3623 ounces of gold; from concentrates, equal to 833 ounces of gold; from tailings by cyanide, 936 ounces of gold; total, 5392 ounces of gold; profit for month, £3120."

KEY OF KOMATA.—Advices from the company's solicitors at Auckland state that the transfer of the property has been duly effected.

LILY AUSTEALIS.—Extract from cable received November 12 from the manager of the mine:—"Advise erection of a 10 stamp battery. We cannot get a crushing; the mines are full. The mine looks splendid. Raised 120 tons stone recently, 3 ounces per ton. Not sufficient water for battery yet; can get plenty the deeper we go."

LANGLAAGTE ESTATE.—Production for October. By cable:—"Mill. Stamps running, 160; ore crushed, 19,043 tons of 2000 lbs.; gold retorted, 5695 ounces.—Tailings—Cyanide process. Tons treated, 8360 tons of 2000 lbs.; gold recovered. 1249 ounces.—Concentrates—Cyanide process. Tons treated, 465 tons of 2000 lbs.; gold recovered, 1246 ounces; total gold recovered, 8190 ounces. The labour strike at the beginning of the month has caused a short fall in the production for October."

LANGLAAGTE STAR.—Production for October. By cable:—"Mill. Stamps running, 60; ore crushed, 2524 tons of 2000 lbs.; gold retorted, 482 ounces.—Tailings—Cyanide process. Tons treated, 2585 tons of 2000 lbs.; gold recovered, 383 ounces.—Concentrates—Cyanide process. Tons treated, 120 tons of 2000 lbs.; gold recovered, 206 ounces; total gold recovered, 1071 ounces."

LEICESTER CONSOLIDATED DIAMOND.—A cablegram, dated the 10th inst., advises that the result of the week's work includes two good stones of 10 and 14 carats respectively, valued at £160."

MEYER AND CHARLTON.—Result of working for month of October:—Crushed 10,577 tons; gold won, 3264 ounces. Extracted from tailings, 1744 ounces. Total, 5008 ounces. Profit for month, £6078.

MONASTERY DIAMOND MINES AND ESTATE.—Advices received state 316 loads yielded 46 carats.

MAWSON'S REWARD.—The following information has been received by cablegram:—"No. 3 shaft, 60 feet level (north drift) is now extended to 35 feet. The width of the reef is 4 feet 6 inches, clean ore and payable—contains visible gold. South drift is now extended 13 feet, reef widening. The width of the reef is 2 feet. Good quartz.—North shaft. 87 feet level is extended to 95 feet 6 inches. Reef 5 to 6 feet wide, contains payable ore the entire length. Battery, condensers, tanks, stonebreaker and grizzleys completed."

MOUNT MORGAN (Queensland).—Results for the month of October: Tons chlorinated, 9966; gold returned, 11,126 ounces.

MOODIES.—Last month's returns:—Claims rented, 580; tons crushed, 1450; ounces of gold obtained, 555.

MIKADO.—The result of an assay of sample gold ore taken from a newly discovered lode on the Mikado property shows gold 15 ounces 11 dwts. 8 grains; silver 7 ounces 14 dwts. 13 grains per ton of 2240 lbs.

MOUNT HEPBURN.—The following cable has been received from the mine manager:—"Assays average south 13 dwts. per ton, north 2 ounces per ton."

MURCHISON GIFT.—The mine manager has advised (by cable) the board that 83 tons of quartz have been crushed, yielding 332 ounces of gold, being an average of 4 ounces of gold per ton."

MAWSON'S REWARD CLAIM.—The following information has been received by cablegram:—"The ore body continues to improve in quality; 112 feet have now been driven on the 87 feet level in No. 2 shaft. The level is now 100 feet below the surface outcrop. The gold is very fine, but well distributed."

MAY CONSOLIDATED.—The following cable message, dated Johannesburg, November 5, has been received:—"The yield of gold during the month of October was 3654 ounces, from 12,000 tons crushed. Mill running 27 days. Cyanide 1900 ounces from 9000 tons. Total for month 5554 ounces."

MILLS' DAY DAWN UNITED.—Cablegram from the head office in Charters Towers:—"Have crushed during the month 448 tons of quartz for a yield of 402 ounces of gold." The approximate value of this return is £1400.

NEW COMET.—The Anglo-French Exploration Company (Limited), as London agents for the New Comet Gold Mining Company (Limited), have received a cable from Johannesburg to the effect that the crushing for last month was as follows:—"The number of tons crushed, 7481; number of ounces recovered from mill, 1980; number of tons treated by cyanide, 5530; number of ounces recovered from cyanide, 1133; the total number of ounces recovered, 3113."

NEW PRIMROSE.—The Johannesburg Consolidated Investment Company (Limited) announce receipt of the following cable from the above company:—"Production for October, 6759 ounces; 160 stamps, 23 days; stoppage caused by short supply of water." On October 28 a cable was received stating "that there was then an abundant supply of water, that the battery had been stopped for a few days, but would start continuous working on October 31."

NEW CHIMES.—The result of last month's crushing yielded 1233 ounces of gold.

NEWHOUSE TUNNEL.—The following cable has been received:—"Denver, November 9. We have driven during the past month 200 feet."

NEW QUEEN.—Cablegram, dated Charters Towers, November 7:—"Have drawn on you for £300; 15 feet sunk during fortnight."

NEW GUADALCAZAR QUICKSILVER.—A cable has been received from the manager of this company's mines reading:—"Lighting furnace this week."

NEW ZEALAND TALISMAN.—The following cablegram has been received from the agents of the company at Auckland:—"Contract let for reconstruction, and the enlargement of reduction works and water race. Good progress is being made with the erection of bridge. Expect to strike reef No. 6 adit, after we have driven 55 feet further. Mine developments opening up splendidly."

NINE REEFS.—Telegram from the mine, dated 13th inst.:—"310. Lode opening up well, specks of visible free gold; average assays from the lode give 1 ounce 5 dwts. per ton."

PALMAREJO.—Return for October:—Crushed, 1600 tons; worked 1400 tons, producing $32,500; expenses, $32,500. Milling delayed seven days owing to collapse of tunnel on the conduit stopping the water from the mill.

PORGES RANDFONTEIN.—Production for October: By cable: "Mill. Stamps running, 60; ore crushed, 4000 tons of 2000 lbs.; gold retorted, 1291 ounces.—Tailings—cyanide process. Tons treated, 3300 tons of 2000 lbs.; gold recovered, 401 ounces.—Concentrates—cyanide process. Tons treated, 150 tons of 2000 lbs.; gold recovered, estimated, 300 ounces; total gold recovered, 1992 ounces."

PIGGS PEAK DEVELOPMENT.—The following information has been received by cable from the mines, viz.:—"30 stamp mill. During the month mill worked 19 days, crushed 2100 tons, obtained 252 ounces gold, estimated to be worth £950, estimated profit £250. Assay of tailings 6 dwts. per ton. Have collected 30 tons of tailings worth £1500. This being the first month's run with the new mill some delay was caused by the driving ropes and other parts of the machinery requiring adjustment, which resulted in the mill only working for about two-thirds of the month. The erection of the cyanide plant is being pushed forward with all speed."

ROODEPOORT DEEP LEVEL.—Last month's crushing: Battery ran 27 days, crushed 4460 tons, produced 1614 ounces over plates, 3245 tons cyanided, producing 375 ounces, concentrates 260 ounces. Total production for the month 2249 ounces.

ROODEPOORT UNITED MAIN REEF.—Result for month of October: Crushed 7770 tons, produced 3171 ounces. Cyanide, 790 ounces. Total, 3961 ounces. Profit, £5040.

ROBINSON GOLD.—Production for October (by cable).—"Mill. 120 stamps at work, 16,500 tons of ore crushed, yielded in smelted gold 12,017 ounces; from concentrates (by chlorination) 935 ounces; from tailings (cyanide process) 2695 ounces, from slimes 1023 ounces; from own ore 16,670 ounces; from concentrates bought (by chlorination) 3348 ounces. Total gold recovered 20,018 ounces. Profit for the month £39,000."

SAN SALVADOR SPANISH IRON ORE.—The s.s. *Stanwick* sailed from Santander on the 7th inst. with 1450 tons of this company's ore for Middlesborough.

SPITZKOP FARM.—Produce for October from 10 stamp mill, 168 ounces. Owing to scarcity of labour the mill has only run part time—viz., 17 days.

TREASURY.—A cablegram has been received from the head office, dated November 9, as follows:—"Output for October, 5934 tons, yielding 2716 ounces of gold, value £9157."

VICTORIA (Charters Towers).—The following cablegram has been received at the London office:—"308 tons crushed, yielded 720 ounces gold."

VICTORY (Charters Towers).—Messrs. A. Durant and Co., 32, Gresham-street, London, have received the following cablegram from the head office in Sydney:—"No. 3 shaft. Have struck reef 16 inches. Hanging wall good quality."

VICTORIA REEF.—The following cable has been received from the company's agents in Australia:—"New find looking first-rate."

WITWATERSRANDT (Knight's).—The following cable is to hand, giving result of work done during October:—"60 stamp mill worked 19 days; 6000 tons crushed, yielding 1970 ounces of gold. As company using Siemens process have had no clean up, the estimated yield tailings practical treatment between 3 and 4 dwts. per ton."

WAIHI GRAND JUNCTION.—The manager cables November 10:—"Grand Junction engine shaft is down 504 feet.—Waihi West prospecting shaft. South drive 486 feet."

WEMMER.—The result of work done during October is as follows:—6334 tons crushed, yielding 3766 ounces of gold, 27 days; and from cyanide plant 3500 tons treated, yielding 880 ounces; from concentrates 166 tons caught, assaying 90 dwts.

THE SCOTTISH AUSTRALIAN MINING COMPANY (LIMITED).

NOTICE IS HEREBY GIVEN, that the HALF-YEARLY GENERAL MEETING of the Shareholders of the Scottish Australian Mining Company (Limited) will be HELD at Winchester House, Old Broad Street, London, on FRIDAY, the 20th of November, 1896, at Twelve o'clock at Noon precisely, to receive the directors' report and accounts, and transact the other usual business of the Company.

By order of the Directors,
J. A. TURNER, for Secretary.

Winchester House, Old Broad Street, London,
10th November, 1896.

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LONDON: NOVEMBER 14, 1896.

THE ORIGIN OF ORES.

CONCURRENTLY with the decay of metalliferous mining in Great Britain, which the annual volumes of mineral statistics bring out with startling distinctness, there appears to be an equally great falling off in British interest in all concerning the theory of ore deposits. Very little work indeed has been done in this country on the latter subject since the days of Sir HENRY DE LA BECHE, who contributed so much to our better understanding of mineral veins about the middle of the present century. Since his time, however, this branch of geology has been all but neglected, and his name is about the only one amongst those of our prominent geologists that occurs to the mind in connection with such investigations. It was about the middle of the present century, too, that British metal mining was at its zenith, when the value of our output of heavy metals—tin, copper, and lead—was many score of times what it is to-day. Seeing, moreover, how greatly the world's production of these metals has increased within that half century, our share in it has fallen even far more relatively than it has actually. Nevertheless, British mining men are still interested very considerably in the world's production of metals, whether as owners, engineers, or workers of metal mines, both in our colonies and in other parts of the world, and it does not seem to us right that the theory of metalliferous mining should be as completely neglected as it has been in this country.

It is, perhaps, characteristic of ourselves as a nation that, with all the outcry about technical education that is agitating us at the present moment, so few people should see that it is in directions such as these, that our efforts should tend. In mining, for instance, no technical instruction is required to teach our miners how to stike a drill or to wield a pick, for in technical skill they can still hold their own against the world. What they do need, however, and what technical education, so-called, ought to, but does not, give them is information about the theories underlying their art, about the mode of occurrence and mode of formation of the ore deposits which they have to exploit, seeing how much fruitless labour and useless expenditure might be saved by a proper understanding of these matters. It is also, perhaps, equally characteristic of the educational bent of America and of Germany that these two great mining nations should have energetically taken up the branch of study that we have so completely abandoned. In Germany the mode of formation of ore deposits has for a very long time indeed been a very favourite subject of speculative inquiry, whilst in America it has been taken up in comparatively more recent times and upon German lines, but with an energy and acumen that seem to be the especial property of the best class of American scientific men, and that promise even more important developments than those which have hitherto been attained.

We are reminded of this phase of American geological enquiry by two admirable papers in the recently-published volume of "The Mineral Industy"—namely, the "Origin of Ores," by Professor J. F. KEMP, and the "Formation of Eruptive Ore Deposits," by Professor J. H. L. VOGT. It will, perhaps, be remembered by some of our readers that we called attention at the time to a paper by the late F. POSEPNY on the "Genesis of Ore Deposits," contributed in 1894 to the American Institute of Mining Engineers. We held then, and still hold, that this admirable paper had an even greater value in stimulating the study of ore deposits than in contributing theories of really permanent importance. This is well shown in Professor KEMP's paper, which is in a sense reactionary, inasmuch as it attaches an especial importance to the igneous origin of ores, a method o genesis that POSEPNY rejected in a somewhat scornful manner. We need hardly say that the modern theory of the igneous origin of ores has but little in common with the theory of the igneous injection of mineral veins that was held by a good many of the earlier geologists a century or so ago. It is, however, curious to note that the very old theory of the formation of mineral veins by metallic vapours has practically been revived by Professor VOGT under the new name of "pneumatolysis," and is now meeting with a good deal of acceptance.

Professor VOGT divides ore deposits produced directly as the result of eruptive processes into two main groups—those formed by "magmatic differentiation," and those formed by the just mentioned "pneumatolysis." The ore deposits of the first group he divides into three kinds—oxides, sulphides, and native metals. He holds that molten rock matter may and does carry various metals either as oxides, sulphides, or native metals dissolved in the molten fluid mass, and that these segregate out on cooling, forming, when of sufficient size, ore deposits in the economic sense of that word. He seems to attach considerable weight to SORBY's principle that such segregation is likely to take place in the cooler parts of the solution where the dissolved matter will be concentrated, but he does not point out how the action of gravity is to be overcome. Such deposits are common at the upper surfaces of contact of the eruptive rock with the strata penetrated by them, yet, seeing that the specific gravity of gabbro, for instance, is mostly under 3, whilst that of the titaniferous iron ore chiefly associated, according to Professor VOGT, with that rock, is generally well over 4·5, an explanation would seem to be needed to show how the heavier mineral came to occupy the upper part of the deposit. Whether the different melting points of the rock and the ore have anything to do with it, is a fair subject for investigation. The best example given by him is the very constant association of chrome iron ore with olivine rocks, or their serpentinised derivatives. This association is pointed out very clearly, and, indeed, the remarkably uniform manner in which this ore is associated all over the world with rocks of the olivinite on peridotite group is most striking, whilst even secondary minerals that contain chromic acid as an important constituent are pretty closely confined to the same class of rocks.

Amongst the sulphidic segregations, Professor VOGT lays particular stress on certain nickel-bearing pyrrhotites that are found to occur in or associated with gabbros in various parts of the world, for instance—Ringerikes in Norway, Lancaster Gap in Pennsylvania and Sudbury in Ontario. There is not much doubt but that stable monosulphides such as those of iron, nickel, &c., can be dissolved to a certain extent in basic eruptive magmas, but it is, perhaps, doubtful whether a bisulphide such as iron pyrites, which is decomposed at a red heat, can be similarly dissolved. Professor VOGT does not make it clear whether he would include deposits of cupriferous iron pyrites, such, for instance, as the huge deposits of Huelva, in this group or not. On the one hand there is the difficulty we have just noted about the pyrites, and on the other there is a most striking resemblance between the mode of occurrence of these Huelva deposits, and those at Sudbury, so much so that it is almost unavoidable to refer them both to a common mode of origin. Professor VOGT, however, makes out a very strong case, although it has still some weak points, and his views have

met with a great deal of acceptance. He is weakest, perhaps, in his last group—that of metallic segregations, in which he includes the nickeliferous Disco iron of Greenland, and various other occurrences of nickeliferous iron, as well as certain of the metals of the platinum group.

In addition to the deposits thus formed by segregation from the molten magmas of eruptive rocks, VOGT considers that another important class of ore deposits is due to the after effects of eruptions, in the form of vapours given off by the cooling mass of erupted rock. He ascribes this mode of origin more especially to the various tinstone deposits of the world, which he considers to have been produced in the manner first indicated by DAUBRÉE, namely, by the interaction of water vapour with fluoride or chloride of tin. It is quite certain that crystals of tinstone can be formed in this way, but not so certain that they have been so produced in nature. It is difficult, for instance, to understand how tinstone can have been introduced in this manner into a fissure vein, which at the same time contains, as so many do in Cornwall, copper pyrites, which can hardly have also been produced pneumatolytically. Again, in and near many Cornish tin veins, beautiful pseudomorphs of tinstone after felspar crystals are common. Here the granite must have cooled so completely as to admit of the formation of the felspar crystal, which must subsequently have been dissolved out by the action of meteoric waters, and the cavity thus left have been subsequently exposed by some invisible vent to the action of the vapours of water and of tin fluoride. Such a series of processes would demand oscillations of temperature that can hardly be supposed to have taken place on any intelligible theory of earth movements.

Professor VOGT is also prepared to ascribe a number of apatite deposits to similar pneumatolytic action, but this theory does not seem to fit many cases. Notably, it would be difficult to accommodate it to the observed occurrences on Lake Champlain of masses of magnetite associated with granular apatite.

Professor KEMP takes a wider survey than does Professor VOGT of the mode of formation of ores, but even he does not touch on the very numerous group of deposits that have probably been formed by replacement, as, for instance, the red hæmatite deposits of Lancashire and Cumberland, according to Mr. KENDALL, who has studied them carefully, and who is one of the very few Englishmen who have done any work at all on ore deposits, although he has confined himself within very narrow limits. Nor does Professor KEMP say much about those deposits of lead and zinc ores which have probably been formed at shallow depths either by replacement or by filling pre-existing cavities. He almost takes for granted that the so-called "lateral secretion" theory of ore formation, at one time so strenuously advocated by German geologists (and still held by a section of them) is practically untenable, and that the "ascensionist" theory, which found its most recent advocate in POSEPNY, is alone to be relied on. It is, perhaps, not wise to entirely reject the former theory, and to maintain the latter as the only possible solution of this very complex problem, more especially as he appears to agree with the opinions of C. R. VAN HISE, whom he quotes as having calculated that the maximum depth at which water-filled cavities can exist in the earth is 10,000 metres (say 6·1 miles), or about 1-637 of the radius of the earth. This depth is thus so small compared to that of the distance from the surface to the earth, that the present form of the theory loses to a great extent its purely ascensionist aspect, and geologists of all schools may be found to agree with Professor KEMP's opinion that 5 miles of depth marks the lower limit of the formation of mineral veins, though we think that his upper limit of 3 miles is much more open to discussion.

Whilst agreeing with many of Professor VOGT's views, Professor KEMP makes a suggestion in which he diverges from them, which certainly deserves careful consideration; he suggests that sulphide deposits connected with eruptive rocks may not be magmatic segregations, but may have been formed pneumatolytically by the action of sulphur vapours. Though scarcely acceptable in its present crude form, this hypothesis may contain in it the germs of the true explanation of the genesis of these deposits, and we hope that further work may be done on it.

In any case we trust we have said enough to stimulate the energies of those of our readers who are engaged in mining ore deposits in various parts of the world, to induce them to make a careful study, not only of the deposits, but of the rocks in which they occur, and to thus contribute somewhat to increase the scanty store of facts upon which geologists are now attempting to found theories of ore formation, in order that this important branch of knowledge may be advanced as it should be in our own country.

CONSOLIDATED GOLD FIELDS AND THE DEEP LEVEL QUESTION.

THE surprise which we expressed at the unenthusiastic reception which was given to the annual report of the Consolidated Gold Fields Company has been increased by the immediate effect of Wednesday's meeting of shareholders upon the Stock Exchange. Those who were present on that occasion, and had an opportunity of observing the ardent spirit of unanimity which prevailed among the shareholders, and of noting the confidence displayed by the company's technical advisers—than whom there are no men more experienced in South African affairs—will be at a loss to understand the coldly temperate interpretation which the markets have put upon the present position of affairs, and future probabilities. Up to the present, the holders of shares in the company have certainly had no reason to complain of what their directors have done for them. So far as dividends are concerned—the primary test of a company's success—the past record has been fully maintained, despite the period of depression which political causes have lately produced in South African circles, and there are at present no indications that the continuity of the heavy dividend payments, to which the shareholders are accustomed, will be soon broken. Distributions of 125 per cent. are as satisfactory as they are phenomenal, and the confident hope expressed by the directors that they will be maintained should prevent the proprietary from indulging any of those vaguely pessimistic reflections, devoid in most instances of any substantial grounding, which are so assiduously nurtured and encouraged by the honourable fraternity of the "bears." There are few limits to the resourceful ingenuity of speculators in share values, and all those who are versed, even superficially, in Stock Exchange tactics, learn very early not merely to discount from, but very often to reject in their entirety the highly-flavoured and misleading reports that gain currency when the financial world is under the uneventful spell of a political and industrial calm.

Latterly it has become customary for financiers of a certain class to regard the Consolidated Gold Fields Company in a loose sort of a way as an exclusively deep level undertaking. This view has probably resulted from the birth of the oft-quoted phrase that the company have "pinned their faith to deep levels." The future of the company in the broadest sense is no doubt dependent upon the deep levels, about which so much has lately been said and written, being found workable upon a remunerative scale. Acting upon the advice of the best experts in the world, to one of whom the Rand is largely indebted for its rapid rise in public estimation, the company has acquired an extensive series of deep level properties, which in the most reliable quarters are expected to ensure for the corporation a future not only satisfactory, but even brilliant. To these, no doubt, the directors must look for the solid and permanent prosperity of the undertaking in their charge, but the various other interests in their possession—from which the whole of the present profits are derived—are in themselves sufficient to place the company in the forefront of South African enterprise. Their holding in the Simmer and Jack, for instance, which must be considered an outcrop company, is by far their largest holding, and the way in which this concern is developing is shown by the fact that it is now working over 100 stamps—with the prospect of bringing an additional 180 into operation during the coming year—and realises a profit of £10,000 a month. It must, however, as Mr. DAVIES pointed out, be obvious that until the various mines in which the company are interested have developed to a remunerative point the profits of the Consolidated Gold Fields, which are largely resultant upon financial operations, must fluctuate with the rise and fall of markets. Seeing, however, that they have done so well during the year which saw the JAMESON raid and the German Emperor's kindly message to President KRUGER, it is no great feat in optimism to believe that they will do equally well during the current year. Mr. DAVIES predicts, indeed, an especially good year for Rand mining during 1897, and he has not far to seek for facts which give colour to this belief. The reduction in wages, and the decision in the cyanide case, while regrettable from the points of view of the Kaffirs and the shareholders in the African Gold Recovery Company, are undoubtedly potent factors of encouragement as to the future development of the South African gold industry. The political output is hardly so satisfactory, but it has yet to be proved that the various aggressive attitudes towards the mining industry and this country which are credited to President KRUGER are not mischievous *canards*, circulated with a view to depress market quotations, and if such should turn out to be the case, the conditions which are necessary for the profitable conduct of a large financial concern, such as the Consolidated Gold Fields Company, will soon come again into play. In this regard, moreover, it must not be forgotten that the direction of the company's affairs and the choice and completion of whatever operations may be conducted on its behalf, are in the best possible hands. The criticism so often directed against mere figure-head company directors does not apply in the case of a corporation which depends for its profits upon experience of, and insight into, market movements, a financial ability that few men can acquire, and an influential standing in the City, which can make itself felt when occasion demands. All these qualifications are joined in the board of the Consolidated Gold Fields Company, and at the present time the revenues of the concern are the direct result of knowledge and ability on the part of the directorate. By a recent resolution, the directors have been converted from creditors of the company into partners, so that there is solidarity of interests between them and the shareholders to a more pronounced extent than is usual with Limited Liability concerns.

Both for shareholders and the public at large by far the most interesting passages in the proceedings at the meeting on Wednesday were those relating to deep levels, upon which, as we have stated, the company is so largely dependent for its future prosperity. The name of Mr. HAYS HAMMOND, who may be said in a sense to have discovered the Rand, lends particular importance to his utterances upon this vital question, and all well-wishers of the Transvaal gold industry will be pleased to know that he was able to make them so reassuring. Passing over his remarks upon the precise definition of a deep level claim—which are not, however, without considerable interest—it may be noted that in his exposition of the grounds for forming a confident and favourable opinion as to the results of mining operations at depth, he answers with an emphatic affirmative the question whether the reef formation extends to the depths contemplated by the exponents of deep level mining principles. About this question there is apparently absolute agreement among the geologists and mining experts who have considered the subject; and if there is any value in specialised knowledge and experience, so remarkable a unanimity could hardly rest upon any but the most stable foundation. It remained for the well-known Bezuidenville bore hole to add practical evidence to theoretical opinion, and what may be called the deep level doctrine has been placed upon a basis that it would be very hard to shake. It would, of course, be unwise to speak with absolute certainty of a form of mining operations that has not yet been actually carried out, but at present it is no exaggeration to say that all the evidence points one way, and that the case is one where an extreme of probability has been reached. As Mr. C. RUDD stated, the conjunction of expert opinion analagous experience in other parts of the world, and the evidence of the bore hole are difficult to resist, and abundantly justify the enterprising acquisition of deep level properties which has been the policy of the board in the past. There remains only the question as to whether the operations at depth would be remunerative, and here there is similarly strong testimony. Without going, perhaps, the whole distance with Mr. HAMMOND in holding that the future cheapening of commodities will bring the cost of deep level mining down to the figure of expenditure common to ordinary mining operations, there is reason to suppose that a great deal too much has been made of the possible increase in cost as depth is attained. There seems, then, the strongest reason to hope the best from deep level mining, and if the expectation should be realised the future of the Consolidated Gold Fields will not only be prolonged far beyond the ordinary span of company existence, but will be of a kind to justify the adjectives by which, in anticipation, it has so often been qualified.

JUMPER PROSPECTS.

AT the present moment there is very little encouragement to speak hopefully of the immediate future of the South African market. There is but a faint prospect of the heavy cloud of depression now overhanging it moving away and revealing a brighter vista of promise and hope. Were one to seek for any reasonable cause of the inactivity and of the nervousness from which investors seem to be suffering we should find none, for the situation all round, in spite of rumours to the contrary, is one of encouragement. The conviction is more and more gaining ground that the principal cause is an extensive bear movement, and if it be so, this should be a greater inducement to the public to hold on to their shares and also to purchase gilt-edged securities at low prices. If the great houses are trying to knock down prices so as to pick up shares cheaply for future profits, it is evidence that they regard the present and the future with feelings of confidence, and certainly have no faith themselves in the rumours which they so assiduously spread to depress prices. But this conviction may not reflect the truth, though the probabilities in favour of it are exceedingly strong. For we do not think that in the present situation in South Africa there is anything to engender feelings of unrest, though pessimists would have us believe that we are on the verge of a war with the Transvaal Republic. Certainly, in the present position of the mining industry there is sufficient to inspire confidence, for the future never loomed so brightly as it does now. With respect to the individual companies, especially those on the dividend-paying list, the prospects of the majority are not only assured, but are really magnificent. Jumpers have long been considered as amongst the first-class, and in spite of the disappointing half-yearly report just issued, there is no reason for depriving it of this eminent position. The profit earned during the half-year ending July was very small, not sufficient to enable the directors to declare a dividend, although 30 per cent. was paid on the six months ending February. This is certainly enough to give rise to much unrest and discouragement, especially as the poor result was due to "passing a poorer zone than hitherto." The directors, however, think there is every reason to believe "that normal profits will again be reached shortly, when the company will be placed in a position to resume its usual dividends." But the manager himself does not appear to be absolutely convinced of this, and his guarded expression of opinion is not likely to give much assurance to the shareholders. He expresses himself as follows:—"Having been such a short time in charge of your property, I am not in a position to positively state that the grade of the ore will improve, or that we shall be able to reduce the total working expenses to any great extent, but I have every reason to believe that we shall shortly be breaking a slightly higher grade of ore, and I feel confident that the present six months' working will compare favourably with the past half-year in the value of the ore, the tonnage milled (unless something unforseen occurs), the total output, the costs, and the profits made. However, it is just possible that the labour question may upset our calculations, but so far our natives have been very quiet, and made no demonstration when notified of the intended reduction of wages." It will thus be seen that the manager does not bind himself to any definite opinion, and only commits himself to the guarded view that there is "reason to believe" an improvement will take place. The shareholders, however, will be encouraged by the improvements in the outputs of the last two months, when both September and October show considerable increases. It will also be perceived that the manager does not speak altogether encouragingly of the labour question, but the likelihoods of any trouble on this head are very remote. Evidence strongly favours the view that the natives are submitting to the inevitable with much grace and philosophy, and seem convinced that any forcible opposition on their part would not be to their advantage. Therefore, the natural conclusion is deduced that peace will reign. During the half-year the working expenses were slightly increased. This is accounted for by the smaller tonnage handled, the high price of meal, and also on account of the scarcity of native labour, the company being compelled to pay out large sums of money in procuring natives. Therefore, though the half-year was somewhat disappointing, there is, especially from present evidence, nothing to engender discouragement in the minds of shareholders.

REPORTED DEMAND FOR INDEMNITY.

THE financial world has been a little excited this week by the announcement that President KRUGER intends to demand indemnity from the Chartered Company to the extent of one million. The announcement was made through the medium of the Transvaal *Standard and Diggers' News*, an organ which is regarded as being under the influence of the Transvaal Government; but as no direct communication on the subject has been made to the British South Africa Company, it is generally looked upon with discredit, the conviction being that it is intended as "a feeler," in order that the Boers might learn how such a demand would be received here. That one million sterling would be an exorbitant sum goes without saying, and we can scarcely believe that such an unjust demand is likely to be made. It is a relief to learn that the Volksraad has passed a resolution permitting batteries to work on Sundays, on the condition that not more than 5 per cent. of the employés are engaged. The mills will, therefore, be able to run as usual. According to the correspondent of the *Financial Times* this action of the Government is regarded as a further concession to the gold industry. It should assist, at any rate, to remove much of the distrust with which the Government is regarded, and as this is partly accountable for the depression in the South African market, it should have the effect of greatly relieving it.

A HUMOROUS LEGISLATIVE PROPOSAL.

THE New Zealand Parliament, who are, perhaps, noted rather for the extreme than for the statesmanlike character of their enactments, have lately been adopting measures for the encouragement of the mining industry, and have been led by their industrial enthusiasm to seriously consider a law which may become a grave hardship to the inhabitants generally of the colony. It is proposed to throw all land, no matter what the right of tenure, open to the prospector, and to give any person who may discover gold a prior claim to the land, the existing owner being turned adrift, with a meagre compensation in his pocket, to find another eligible site for a resting ground. The manner in which this Bill will be regarded probably depends, in the first instance, upon the particular position of the individual who brings himself to pass judgment upon it. The broad and generous scope of the measure is likely to recommend itself more to an industrial pioneer than to a land owner, and it is not difficult to conceive of a case that would bear very hardly upon an unfortunate freeholder whose Summer garden happens to lie near to the outcropping of a "healthy and well-defined" quartz lode. Whatever inconveniences may attend the Spring incursion of the inevitable plumber pale utterly into insignificance as compared with an inexorable demand for entry proferred by an "experienced miner," armed with the implements of his craft. Life under these conditions may easily become burdensome to a man well on in years, who has decided to pass his declining days sweetened by his skill in training peach trees and the knowledge how to put radishes into the ground with a reasonable probability of seeing them sprout. In every road-mender he will spy a possible enemy, while his unguarded moments will be troubled by visions of prospectors waiting round the corner like lamplighters, ready at any moment to walk in and eject the old man from the cherished companionship of his garden. Legislation such as this, by unsettling conditions of living and annihilating the spirit of confidence, will doubtless, in the long run, do far more harm than good to the industries of a colony, and it would be well if the New Zealand Parliament could be induced to pause while there is still time. The rate at which that body are now moving is a standing temptation to writers to make use of the most frequently bequoted phrase from the classics, and to advise the Parliament in latin, to "hasten slowly." But we refrain.

BURBANK'S CONSOLS.

IT is not very likely that anyone dispassionately reading the report of the statutory meeting of Burbank's Consols will arrive at the conclusion that the mine is destined to turn out a valuable one. We admit that in the present early stage of its development it is hazardous to praise or to condemn the mine, but it is not unreasonable to ask for a little more evidence of its richness than was given at last Monday's meeting. The Chairman spoke very highly of the developments in Burbank's Birthday, and he seems pretty assured in his own mind that the reefs in the Burbank Consols "will prove to be of the same character." Of course, it does not follow, for there have been numerous instances in which a rich mine has been surrounded by poor neighbours, and in the case of the Burbank another property intervenes. He also laid strong emphasis upon a conversation he had with Mr. BURBANK, but how does this read in the light of the following letter from the latter gentleman, published in a contemporary the following day?—"I have recently arrived from West Australia, and wish to make public the injustice which attaches to all well-known mines which have proved good. For instance, when a mine is floated and is rich, immediately other mines appear with the same name attached. I think that it is most unfair that a name can be used in connection with inferior mines not discovered by the original prospector, and to mislead investors. As the discoverer of the well-known Burbank's Birthday Gift Gold Mine I can speak with feeling; for it seems marvellous the number of mines which have my name attached in some way, my own mine seeming to take a second place, when I, and the whole of Coolgardie, know it to be one of the best mines in the district, if not the best. In conclusion, I may add that I am not connected with any mine bearing the name Burbank yet floated, excepting Burbank's Birthday Gift Mine." It does not follow conclusively from this that Mr. BURBANK classes the Consols amongst the inferior mines, but he evidently strongly wishes to be identified only with the Birthday Gift, upon the prospects of which he naturally holds a favourable opinion. Before purchasing stock in the Consols we would strongly advise investors to wait for further evidence of its richness, and especially of its permanence.

BOARD OF TRADE RETURNS.

THE Board of Trade returns for the past month, showing, as they do, a substantial increase in the imports and a small decrease in the exports, cannot be considered altogether unsatisfactory. The returns, of course, were greatly affected by the election in America, and by the unrest which prevailed consequent upon its doubtful issue. Though the return of Mr. MCKINLEY cannot be said to have exceeded general expectations, nevertheless no one anticipated such a crushing defeat of the Silverite party. Now that the incubus has been removed which weighed so heavily upon trade, the outlook is much brighter than it has been for a very long period, and we may look forward to the returns for the current month being much more favourable. For October the imports amounted to £39,576,290, which, in comparison with the same month last year, shows an increase of £2,716,422, or 7 per cent. For the 10 months the increase amounted to £15,174,179, or an average of £1,517,417 per month. Thus the increase for the month is much above the average, and, accordingly, can be regarded with much satisfaction. The exports totalled to £20,654,997, showing the slight reduction of £173,869, or a little less than 1 per cent. The principal decrease is that of £663,363, under the heading of yarns and textile fabrics, due to a heavy decline in the quantities of cotton and linen yarns and fine piece goods. Another large decrease is shown in raw material, there being a reduction of 12,000 tons in the quantity of coal exported. There is, however, a continued advance in iron and steel, of which there were exported 344,615 tons, an increase of 76,282 tons, or 28·4 per cent. Of copper we exported 74,482 cwts., a decrease of 40,090 cwts., or 31 per cent, the value being £195,247, a decline of £94,185. Unwrought copper, on the other hand, increased 60·3 per cent, but wrought copper fell 15·4 per cent. The amount of coal shipped is returned at 20,981,500 tons. The exports of foreign and colonial merchandise are given at £4,759,026, and for the 10 months at £46,473,302, and show respective decreases of £701,378 and £4,105,945.

VICTORIA'S LAMENTABLE FALL.

OUR readers will learn, with feelings of much sorrow, that the Government of Victoria, by methods which cannot be said to redound to its credit, have opposed so great an obstacle to Mr. STIRLING'S mission to London that that gentleman, for reasons which will instantly elicit the sympathy of all honourable persons, has declined to undertake the task. With the laudable object of that mission our readers have been made familiar, for only a week or two ago we had occasion to compliment the colony upon its high-minded action, and to express the wish that other Governments would follow its example. We now learn that the project has encountered such bitter opposition in Parliament that there was no other course open to Mr. STIRLING except the one that he unhesitatingly took. The public of England will be painfully astonished to hear of the discreditable practices to which some of the members of Parliament resorted to achieve their ends. Our correspondent informs us that the character of Mr. STIRLING, which is above suspicion, was assailed, and that insults, to which no human dignity could for one moment submit, were heaped upon him. The public of England is likely to put an interpretation upon this action which is not likely to benefit very greatly, and in the immediate present, the mining industry of Victoria, and therefore, the aims of these near-sighted individuals are likely to be signally defeated.

ENGLISH CAPITAL AND RUSSIAN ENTERPRISE.

THE intimate connection between politics and industry is shown by the statement affirmed in some quarters that the impending completion of the trans-Siberian railway has caused English capital to flow somewhat more freely into Russian spheres of activity. Everyone knows that the railway in question was primarily a political move—and a political move of the highest wisdom—and any effect it may have upon Siberian commerce and production is merely secondary and contingent to Imperial considerations. Mining is, perhaps, the branch of enterprise which will benefit to the largest extent by the new line of communication. Those acquainted with the elementary facts of the productive capacities of the different European and Asiatic States will know something of both the importance of the Siberian mines, and the extent to which they are already being worked, and it must be obvious that their development will be considerably facilitated by a new and more rapid method of transport. Already—even before the railway has got into anything like working order throughout its entire length—there are signs that commercial activity is reawakening in many parts of further Russia. A company has, for instance, been formed for the mining of gold on the eastern slope of the Urals, and for the application of an American chemical reduction process. A great expansion has also taken place in the mining of coal and in iron manufacture, which are branches of great moment to the general prosperity of the country. In no other country is commerce so wholly dependent upon political considerations as in Russia, and both the visit of the Czar to Scotland, and the unscrupulous campaign of insinuation and misconstruction which the St. Petersburg press are now waging against this country, will not be without their due effect upon the industrial relations between the two Empires. There is absolutely no reason from either of the national points of view why England should not perform her share in opening up Russia's mineral wealth. Such a course would be beneficial to both countries, not only in the solid commercial results which would follow, but also in the more intangible but not less important accession of good feeling which would draw the two Empires, whose interests are certainly diverse enough in different parts of the globe, rather more closely together.

THE MINING MARKET.

FRIDAY EVENING.

The Settlement easily arranged.—More lying rumours contradicted.—Markets quiet, but steady.

THE diversion of public interest from Mining Securities to the English and American Railway Markets has been very marked this week. The Settlement was commenced on Monday and concluded on Thursday with the smallest possible show of excitement. Although lenders of money obtained better rates in the general market the reduction in the open Account in the Mining department left lenders with funds, over which, in many cases, they were only too glad to employ on terms more favourable to the borrower than had been the case. All the incidents of the week have been calculated to affect the South African Market only, and are accordingly dealt with under that special heading. In other departments the course of business has been singularly uneventful. Differences at the Settlement were almost universally in favour of operators for the fall, but it was noticeable that rumours as to impending default were much less frequent, and, in point of fact, no difficulties of any kind transpired. On Saturday, the eve of the Settlement, a firm tone prevailed, though business was naturally on a small scale. The carry over was soon arranged on Monday morning, and in the afternoon some rather excited dealings took place in Goldfields and Chartered, the former fluctuating within comparatively wide limits. Takers in of West Australians were actually complaining of the short supply of bulls willing to pay the rates demanded. Lord Salisbury's speech at the Guildhall can hardly be said to have exercised any effect upon the Mining Market, seeing that all reference to the Transvaal was studiously avoided. Other departments of the Stock Exchange, however, opened steady on Tuesday morning, the Prime Minister's speech being regarded as satisfactory, and in sympathy with the general tone, mines were very firm during the morning. The diminished Rand output, however, served as a pretext for letting prices slide, and the market was dull in the afternoon. On Wednesday Kaffirs were distinctly flat, the indemnity *canard* completely overruling any favourable effect that the Goldfields meeting might have had. Westralians were very quiet, business being confined to two or three specialities in which small advances were scored. The opening on Thursday was flat, but on each decline bears came into cover and the close was much steadier. To-day prices have hardened slightly on the refutation of some of the lying reports circulated by the bears, but there is very little life in the market, and the last prices are not quite the best of the day. West Australians are to all intents and purposes a dead letter.

South Africans.

The October output on the Rand was announced on Tuesday, the total yield being 199,889 ounces, as compared with 202,561 ounces for the preceding month, and 192,652 ounces for the corresponding month of 1895. Some such falling off had been expected in consequence of the strike of labourers at a few of the mines in the early part of the month. Naturally, however, the decline below the round 200,000 ounces was made the most of for the purpose of depressing the market. We have expressed the strong opinion on several occasions recently that the Johannesburg bear clique was doing its utmost in every way to spread distrust amongst holders on this side. No more striking illustration of this has been seen than in the publication of a cable from Pretoria on Wednesday afternoon, stating that the Transvaal Government had decided to demand an indemnity of one million sterling from the Chartered Company for its connection with the Jameson raid. This morning brought a categorical denial of this statement, accompanied by the freely expressed opinion that the report was intended to prejudice the Chartered Company at a moment when the new issue of 500,000 shares was under offer to the shareholders. Deliberate wrecking tactics such as these deserve the denunciation of every decent man. It is to be hoped that the conspirators have severely burnt their own fingers in their unworthy attempt at plunder. Their action, however, is only on a par with their general plan of campaign. The publication of the cable on Wednesday afternoon was the more startling in that it came within an hour or two of the emphatic assurances of the directors at the Gold Fields Meeting as to the absence of cause for uneasiness in the political outlook. When we left the meeting at midday on Wednesday we were under the impression that it ought to have a distinctly reassuring effect. Nevertheless, brokers came back to the market and deliberately sold bears on the Deferred shares, which in the Street were offered nearly 10s. below the price ruling, whilst the meeting was in progress. It is hard to understand the determination of the market to get Kaffir prices lower, unless the contention that the dealers are bears to a man has a very solid foundation. At the Settlement on Monday the Account was declared to be reduced within the smallest possible compass The more probable fact is that the short interest amongst the professionals outweighs the bull position on public account. Goldfields Deferred were easily carried over at 5 per cent. early on Monday morning, whilst by Tuesday the rate had disappeared altogether. On Chartered the contango was never over a penny, and a good business was done even. The same may be said of East Rands, whilst gold shares generally were continued on lighter terms than for some time previously. With a market in such a condition, very little buying is required to send prices up with a rattle. The combination of forces, however, is all arrayed in the contrary direction. As far as Chartered and Gold Fields are concerned, we are strongly of opinion that the bears are preparing a rod for their own backs. The announcement by cable from Pretoria this morning that the Volksraad has agreed, by 14 votes to 10, to allow the batteries to work on Sundays, provided that not more than 5 per cent. of the staff are employed at the mines, is a strong point in favour of a recovery, for the Sunday labour question has been one of the chief war-cries of the bears. As we said a week ago, one by one the adverse points insisted upon by the pessimists are being proved to have no foundation outside their malicious imaginations. Knowing their genius for invention, it would be folly to predict that we have heard the last of these forebodings of evil. The emphatic contradiction of practically everything that has been put about to promote distrust, must, however, be

carefully remembered by genuine holders, who may be counselled now, perhaps, more forcibly than ever before to stick to their guns. Chartered shares, which had been steady at 2⅛, or thereabouts, from the date of the meeting until Wednesday last, when they broke to 2¼ on the false rumour as to the indemnity, are now quoted ex. the right to apply for the new shares at 2. There has been a recovery to 2⅛. Goldfields are ¼ better on the day at 8½ ex the 15s. dividend deducted yesterday. This makes them ⅝ lower on balance, but curiously enough Goldfields Deep are ⅜ better at 6⅞. Seeing that its heavy commitments in Deep Level mining are made the pretext for the attack on the Consolidated Company, it is difficult to follow the reasoning which has brought about the movements in the two last quoted shares, which are believed to be due to the operation of the same men. It is noticeable that the Consolidated Company is no longer a holder of Chartered shares, so that the quondam connection between Goldfields and Chartered may be regarded as at an end. By way of explaining the heavy selling of Goldfields Deferred, a story was going abroad this week that the chief seller had been the South African Gold Trust. The shares of this undertaking are ⅛ better on balance at 6⅝. Land and Exploration shares exhibit only the most insignificant changes. Oceana remain at 1⅞, Mashonaland Agency at 1⅝, Bechuanaland at 1⅛, and Mozambique at 1¼. Hendersons have lost ¼ at 1¾. A good deal of dissatisfaction has been expressed at the proposal of the East Rand directors to allot 200,000 shares at par to themselves in their capacity of proprietors of the "H. F." Syndicate. This explains the special flatness of East Rands, which are ⅛ down at 4½. Anglo-French Explorations have sympathetically lost ⅛ at 3⅞. Angelo has declined ⅜ to 3¾ and Comet ¼ to 1¾. Rand Mines, after being under 23 have had a jump to-day which leaves them the turn of the market better at 23¾. Declines of ¼ are marked in Roodepoort Deep at 1¾ and Nourse Deep at 3½. The Barnato group continues to sag away, and it is noticeable that the highest rates of contango are demanded on these shares by takers in. Johnnies Investments are ¼ down at 2½. New Primroses have lost ½ at 4½, and Crœsus ¼ at ⅞. In the case of both the companies a disappointing crushing return is explained by a short supply of water. Buffelsdoorn have lost ¼ at 1¾, Ginsberg ¼ at 1⅝, Glencairn ⅛ at 2⅛, May Consolidated ⅛ at 2⅛, and Rietfontein ⅛ at 2¼, Kimberley Roodeport is exceptionally ¼ better at 2⅝. The Robinson stocks have been dull. Langlaagte has lost ⅜ at 4¼ and Randfontein ⅛ at 2⅛. The dividend-paying shares of the Eckstein group are lower in the majority of cases, despite the favourable decision as to Sunday mining. Ferreira has lost ¼ at 18½, City and Suburban ¼ at 3⅞, Jumpers ⅜ at 4½, Village Main Reef ¼ at 5, Nigel ¼ at 2½, Salisbury ¼ at 3½, Henry Nourse ¼ at 6½, and Modders ¼ at 4⅜. Meyer and Charlton have improved ¼ to 5⅛, but declines of ⅛ to ¼ are seen in Bantjes at 2⅛, Crown Reef at 10⅜, Kleinfontein at 2½, Knight's at 4⅛, Luipaards Vlei at 1⅜, Robinson at 8½, Van Ryn at 3⅞, Wolhuter at 4⅛, and Worcester at 4. The Lydenburg group is rather easier where changes appear. Diamond shares have exhibited a rising tendency, De Beers having put on ¼ at 29½, and Jagers ⅛ at 9½.

West Australians.

Business has been very quiet in this section. Hannan's Brownhills were run up to 4¼ on Thursday, but gave way this afternoon, closing unchanged at 3¾. Ivanhoe were run up from 8½ on Saturday morning to 9¾ on Tuesday, closing ¼ below that price. A 5s. dividend having been deducted from Great Boulders they are proportionately ⅛ better at 6½. The crushing of 718 tons to yield 2158 ounces fairly well maintains the average. A return of 2176 ounces from 704 tons in the case of Lake View, accompanied by the report that the cyanide plant is a great success, has not prevented a fall of ⅜ in the shares, which close at 6¾. Associated are rather easier at 2¼, but Associated Southern have been bought and close ¼ up at 1⅛. Golden Horseshoes are ⅛ better at 1⅜. Hannan's Consols have sagged away to 1⅛. Lady Lochs are steady at 1½, and Hannan's Reward at 1⅛, Oroya at 1⅜, and and Hannan's Props. at 1¼ are all within ⅛ of last week's prices. There are no quotable changes in the Menzies Group. Lady Shentons are firm at 1⅛. White Feathers are slightly easier at 1½, as are Wealth of Nations at ⅛, but Hit or Miss are maintained at 1½. Ramage Syndicates broke heavily on Wednesday, closing with a loss of ⅛ at ⅛. The subsidiary Black Flags and Golden Plums became unsaleable, though quoted nominally at ⅜. The better class shares have not suffered severely, though changes are generally downward. W. A. Goldfields are unchanged at 5⅞, Exploring and Finance, and London and Globe are rather easier at 4⅛, and Hampton Plains have lost ⅛ at 3⅞. Share Corporation are ⅛ down at ⅜ premium, but Mainland Consols have hardened to 2⅛. By means of a good deal of outside touting, the wire-pullers of Bass and Flinders have succeeded in selling several parcels of shares at 11s. or so. The market, however, in these is very treacherous. Mr. Goodman's West Australian Trading continues out of favour at ⅜, whilst the Founders' shares have sagged away to 9, a loss of some 6 points on the week.

Miscellaneous.

The spurt in the price of copper is responsible for a sharp rise in Rio Tintos, which close below the best at 25⅛, a gain of ⅞ on the week. Anaconda are unchanged at 6½, whilst improvements of ⅛ are marked in Copiapo at 2⅞, Mason and Barry at 3¼, and Tharsis at 5⅛. Indians have been a quiet market, and changes are not important. Champion Reefs are unaltered at 7½, as are Nundydroog at 3⅞, and Ooregum at 2⅞, but Mysore have lost ⅛ at 7⅞, and Coromandel ⅛ at 2⅛. The New Zealand group has been firm. Waihi have risen ⅜ to 6⅞, Taitapu ⅛ to 2½, Consolidated Goldfields ⅛ to 3, Kapanga 9d. to 11s. 3d., and Hauraki 3d. to 16s. Among Charters Towers descriptions small losses are shown in Bonnie Dundee at 7s., Brilliants at ⅛, Day Dawn Block at 11s. 6d., and Mill's Day Dawn at 1⅛. Alaska Mexican has fallen ⅛ to 1½. Broken Hills are unchanged at 2⅜, and British rather easier at ⅛. Mount Lyells have improved ⅛ to ⅜. Wentworths are unchanged at ⅝, but Aladdin's are ¼ down at 2½.

STOCK EXCHANGE SETTLING DAYS.

Consols.

Tuesday, December 1.

MINING MAKING-UP DAYS:

Monday, November 23. | Monday, December 7.

MINING NAME DAYS:

Tuesday, November 24. | Wednesday, December 9.

ACCOUNT DAYS:

Thursday, November 26. | Friday, December 11.

DISCOVERY OF TIN IN BRITISH COLUMBIA.

Mr. Pelly Harvey cables that he has found tin

AFRICAN MINES' OCTOBER OUTPUT.

GOLD.

	May. Ozs.	June. Ozs.	July. Ozs.	Aug. Ozs.	Sept. Ozs.	Oct. Ozs.
Appantoo	376	226	117	—	—	152
Barrett	500	503	650	625	600	410
Block B	2,854	2,511	3,075	3,278	2,821	2,750
Bonanza	—	—	—	3,803	4,002	6,197
Champ d'Or	3,383	3,074	2,969	3,698	2,729	—
City and Suburban	8,351	8,296	9,094	10,794	9,968	9,677
Crown Reef	11,369	10,723	11,011	11,867	11,468	11,570
Durban-Roodepoort	5,519	5,604	5,704	5,740	6,115	6,215
Eastleigh	1,650	1,850	1,750	2,250	2,500	1,950
Ferreira	13,115	13,418	13,601	13,600	13,820	13,304
Forbes Reef	67	—	115	127	97	102
Geldenhuis Deep	4,173	4,031	5,180	5,210	5,515	5,517
Geldenhuis Estate	5,897	6,889	7,319	6,368	6,305	7,623
Geldenhuis Main Reef	1,214	1,589	1,495	1,441	1,427	—
George Goch	4,660	3,740	3,708	3,831	3,872	3,728
Ginsberg	1,018	1,015	1,084	1,112	704	955
Glencairn Main Reef	3,230	3,468	3,824	3,389	3,486	—
Graskop	204	180	236	164	255	185
Henry Nourse	6,298	6,649	6,904	6,784	7,015	7,124
Joe's Reef United	294	227	249	248	171	243
Johannesburg Pioneer	2,810	2,826	3,064	3,149	3,214	—
Jubilee	3,059	2,502	2,812	2,951	2,652	2,008
Jumpers	4,935	4,077	4,960	4,854	5,514	5,392
Langlaagte Estate	9,428	9,131	9,253	10,199	9,697	8,190
Langlaagte Royal	3,182	3,704	4,804	4,068	3,417	3,201
Langlaagte Star	1,207	1,491	1,816	1,516	1,487	1,071
Lisbon-Berlyn	737	655	785	1,185	323	950
Lydenburg Ming. Estate	6,153	5,770	4 941	2,544	—	—
May Consolidated	4,878	5,204	4,741	5,508	5,650	5,554
Meyer and Charlton	3,979	4,109	4,249	4,549	4,249	5,008
Minerva	1,453	1,856	1,654	1,329	538	—
Moodies	690	940	790	575	550	555
New Chimes	1,746	1,825	2,319	1,760	1,774	1,233
New Comet	—	2,488	—	3,042	3,048	3,113
New Crœsus	2,772	2,454	2,577	2,633	2,102	—
New Heriot	6,033	6,014	5,961	6,024	6,011	6,006
New Midas	—	1,438	731	1,559	1,533	2,190
New Modderfontein	2,172	2,778	3,150	3,173	3,126	—
New Primrose	9,004	9,786	10,752	10,161	10,039	6,759
New Rietfontein	2,117	2,150	1,724	2,125	1,948	1,766
Nigel	2,026	2,274	1,990	1,850	2,067	2,237
Orion	897	—	—	—	—	—
Pigg's Peak	—	—	—	—	—	252
Porges Randfontein	—	—	—	—	—	1,992
Prem. Tati Monareh Reef	—	368	—	—	—	—
Princess Estate	2,072	2,274	2,432	2,714	2,506	2,669
Robinson	19,333	20,343	20,612	20 831	19,234	20,018
Roodepoort Deep	2,171	1,927	1,881	2,366	2,036	2,249
Roodepoort Gold	—	1,214	1,338	1,452	1,350	1,121
Roodepoort United M.R.	4,121	3,919	4,067	4,147	4,162	3,961
Salisbury	2,950	2,400	2,400	2.550	2,150	1,650
Sheba	10,024	8,589	8,100	8,005	7,066	6,352
Simmer and Jack	8,653	8,816	8,855	8,330	8,099	—
Spitzkop	—	—	85	—	241	168
Stanhope	920	1,100	1,100	1,050	—	—
Tati Blue Jacket	—	328	—	—	—	—
Treasury	2,373	2,312	2,584	2.566	2,545	2,716
United Ivy Reef	570	700	685	612	614	545
Van Ryn	1,551	1,635	1,626	1,638	1,087	—
Wassau	345	388	626	663	762	805
Wemmer	5,148	4,636	4,891	4,511	4,753	5,366
Witwatersrand (Knight's)	—	—	—	—	—	1,970
Wolhuter	5,043	5,884	6,135	6,640	7,225	7,286
Worcester Exploration	2,444	2,819	2,431	2,476	2,239	—

DIAMONDS.

	Carats.	Carats.	Carats.	Carats.	Carats.	Carats.
Koffyfontein	3,700	4,150	4,400	5,050	4,650	4,000

COAL.

	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Cassel Coal	18,500	24,000	27,000	28,738	31,500	31,510
Great Eastern	13,200	16,600	20,000	19,500	21,000	18,800
Transvaal Coal Trust	—	27,800	33,000	33,800	33,200	—

The following are the profits or losses (the latter being indicated by an *) made by South African mining companies:—

	£	£	£	£	£	£
City and Suburban	7,412	8,018	7,709	13.711	—	—
Crown Reef	15,787	14,134	13,154	15,649	15,557	16,003
Ferreira	28,158	30,286	29,464	28,574	30,364	28,005
Geldenhuis Deep	1,700	450*	2,400	3,956*	1,250	440
Geldenhuis Estate	2,800	6,500	7,200	3,600	1,700	7,842
Geldenhuis Main Reef	95*	1,554	721	409	796	871*
George Goch	4,167	—	—	—	—	—
Henry Nourse	8,175	8,326	9,688	9,608	10,436	—
Jumpers	3,835	880	1,910	2,460	3,700	3,120
May Consolidated	2,888	4,876	2,915	4,538	5,036	—
Meyer and Charlton	3,225	3,701	4,771	4,394	4,066	6,078
New Heriot	8,916	8,622	8,723	7,947	—	—
New Midas	—	—	—	—	—	5,750
New Primrose	3,800	6,594	10,307	8,486	—	—
Robinson	35,241	38,500	35,000	35,500	35,000	39,000
Roodepoort United	4,295	5,020	4,820	4,970	5,600	5,040
Simmer and Jack	10,467	10,216	12,906	11,826	10,002	—
Treasury	1,584	680	938	1,467	965	—
Van Ryn	720*	526*	1,792*	476*	—	—
Wemmer	6,145	3,909	4,950	8,060	5,304	—
Wolhuter	1,445	1,969	2,293	5,248	6,755	—
Worcester	4,052	4,053	—	4,118	4,130	—

COAL.

Cassel Coal	1,838	4,992	6,100	—	7,250	6,973
Great Eastern	1,500	2,200	3,200	—	3,800	2,400
Transvaal Coal Trust	—	2,200	2,700	3,100	3,500	—

THE UNITED EXPLORATION COMPANY.

The report of the directors to be submitted to the ordinary general meeting states that the profit and loss account shows a realised gross profit of £52,962 13s. 9d., or, less £3956 12s. 7d. expenses, a realised net profit of £49,006 1s. 2d. Nevertheless, the directors do not see their way to recommend the distribution of any dividend, as they think it right to set aside, as a reserve for depreciation, the large amount of £39,596 6s. 1d., which, with £2135 16s. 10d., the whole of the preliminary expenses written off, reduces the available profit balance to £7273 18s. 3d. This amount it is proposed to carry forward to the next account. The valuation of stocks and shares has been taken at cost where the market price was above, or there was no quotation, and at market price where the quotation has fallen below cost. This principle may appear very rigorous, but the directors consider it the only safe and satisfactory one. From causes with which all shareholders are familiar, the business period in question, with the exception of the first few months, has been characterised by a series of convulsions of our markets, with the result, on the one hand, of stopping the source of our profits, viz.: the realisation of our interests in properties taken up, and, on the other hand, of necessitating the large provision for depreciation referred to. Taking into account the exceptional circumstances prevailing, the directors consider that the results are not unsatisfactory.

The secretary to the MYSORE WEST and MYSORE-WYNAAD CONSOLIDATED informs us that he has sold the gold obtained in September for £1100 9s. 8d.

THE METAL MARKETS.

THE METAL MARKET, LONDON, NOVEMBER 13.

Copper

OPENED firmer this week at £48 18s. 9d. for cash G.M.B's., and although very considerable quantities were offered, these found ready buyers, and the value even improved to £49 1s. 3d. s.c. and £49 13s. 9d. three months on Monday, whilst Tuesday brought a further advance to £49 8s. 9d. s.c. and £49 18s. 9d. three months, £50 being paid for the latter position on Wednesday, which closed, however, easier at £49 6s. 3d. s.c. and £49 18s. 9d. three months. Yesterday, after a further relapse to £49 2s. 6d. s.c. and £49 15s. three months, the tendency improved somewhat and the former feeling was again in evidence to-day, copper advancing to £49 7s. 6d. s.c. The strength displayed by the American market, where there are buyers of Lake at 11·25 cents, has assisted the improvement here, and the market closed to-night firm at £49 10s. to £49 11s. 3d. s.c. and £50 2s. 6d. to £50 3s. 9d. three months.

Tin

was flat when the market opened on Monday morning, £58 10s. s.c. and £59 7s. 6d. three months being accepted for Straits. There was, however, better speculative support in the afternoon, and this resulted in an improvement to £58 16s. 3d. s.c. and £59 10s. three months. The buying being continued on Tuesday, values were strong at up to £59 cash and £59 18s. 9d. three months, these figures proving the highest of the week. Wednesday's market was depressed by the pretty strong array of sellers, and a decline to £58 12s. 6d. s.c. and £59 8s. 9d. three months occurred, and this retrograde movement, in the absence of fresh support of the article, made further progress on Thursday, when £58 7s. 6d. was taken for cash, and on Friday, when that position changed hands at £58, whilst for three months £58 17s. 6d. was done. The market closed steady at £58 5s. to £58 7s. 6d. s.c., and £59 to £59 2s. 6d. three months Straits. In the Dutch market steadiness has been the prevailing note, but there has also been a slight easing-off in that quarter, Billiton having opened at 35¼ fl. s.c. and 35½ fl. three months, closing at 35½ fl. for both positions. In comparison with Billiton rates, Banca closes very strong at 36½ fl.

Pig Iron.

Scotland shipped about 4500 tons last week, which is equal to a falling off of 800 tons compared with the shipments of the parallel week of last year. The earlier portion of the week was marked by a steadyish improvement from 48s. 1½d. to 48s. 7½d. s.c., and after a relapse to 48s. 2d., a very vigorous rally set in, which carried value up to 49s. 2d. s.c. and 49s. 4½d. a month, the close being strong at within ½d. of these prices and at 40s. 10d, Middlesborough and 50s. 11d, hematite.

Lead

has again stiffened, the conditions being about as described last week, though there has been rather more disposition to buy. The final quotations are £11 soft foreign, and £11 12s. 6d. to £11 15s. English.

Spelter

Early delivery is still difficult to obtain, whilst demand remains very fair. The close is consequently firm at £17 12s. 6d. to £17 15s. ordinaries, and £17 17s. 6d. to £18 specials.

Antimony

is firmer, with more inquiry, at £29 to £29 10s..

Quicksilver.

Firsts are still quoted at £6 12s. 6d., and seconds at £6 11s.

The following are to-night's (November 13) prices of metals:—

	£	s.	d.		£	s.	d.
Copper							
Tough cake and ingot	52	0	0		52	0	0
Best selected	53	0	0		54	0	0
Electrolytic Copper	54	0	0		55	0	0
Sheets and sheathing	—				67	0	0
Flat bottoms	—				63	0	0
Chili bars	spot, & 3 months respectively				49	11	3
Good merchantable,					50	3	9
Copper tubes, seamless	—				0	0	8½
Alloys							
BRASS: Wire	—				0	0	6
,, Tubes (solid drawn)	—				0	0	7
,, Sheets	—				0	0	6½
PHOSPHOR BRONZE: Alloys II.	—				81	0	0
,, ,, III. or VII.	Cog Wheel Brand				82	0	0
,, ,, XI.	—				78	0	0
,, ,, Vulcan brand A1	—				72	0	0
DURO METAL	—				72	0	0
BULL'S METAL	—				65	0	0
Ferrobronze (Vivian's)							
Ingots	per lb.	0	0	5¾			
Ordinary sheets, plates, bolts and bars		0	0	7¾			
Screw bolts and nuts		0	0	8¼			
Pump rods, plain		0	0	7¾			
,, finished		0	0	10¾			
DELTA METAL: No. 4 (per ton)	—				—		
,, Sheets and plates (per lb.)	—				—		
,, Bars, round, square, flat (per lb.)	—				—		
,, ,, hexagon (per lb.)	—				78	0	0
Tin							
English, ingots, f.o.b.	63	0	0		63	5	0
,, bars	64	0	0		64	5	0
,, refined	65	0	0		65	5	0
Straits, spot, and three months respectively	58	7	6		59	0	0
Australian, spot, and three months respectively	60	0	0		60	12	6
Banca ,, (in Holland)	61	0	0		61	2	6
TIN PLATES; Charcoal, best quality per box	0	14	0		0	15	6
,, ,, ordinary	0	11	0		0	13	6
,, Coke, best quality	0	10	6		0	11	0
,, ,, ordinary	0	10	3		0	10	6

These prices of tinplates are f.o.b. at Swansea; at Liverpool 6d. per box more.

Iron						
Pig, G.M.B., f.o.b., Clyde, spot	—				2	8	3
,, Scotch pig, No. 1 Gartsherrie	—				2	12	0
,, ,, Coltness	—				2	13	0
,, ,, Clyde	—				2	10	6
,, ,, Govan	—				2	9	6
Bars, Welsh, f.o.b. Wales	5	10	0		5	12	6
Plates ,, ,,	—				6	10	0
Bars, Staffordshire, at works	—				5	10	0
Sheets ,, ,,	—				6	5	0
Plates ,, ,,	—				6	10	0
Hoops ,, ,,	—				5	17	6
Ship plates, Middlesborough	—				5	2	6
STEEL; English spring	—				12	10	0
,, ,, cast	—				42	0	0
,, Rails at works, according to section	4	5	0		5	15	0
Lead							
Spanish or soft foreign	11	8	9		11	11	3
English pig, common	11	12	6		11	15	0
,, L.B.	—				12	2	6
,, sheet and bar lead	—				12	12	6
,, pipe	—				13	2	6
,, red	—				14	5	0
,, white	—				17	10	0
,, patent shot	—				15	0	0
Spelter							
Silesian ordinary brands	17	12	6		17	15	0
,, special brands	17	17	6		18	0	0
English Swansea	17	17	6		18	0	0
Sheet Zinc	20	5	0		20	12	6
Antimony							
Antimony	29	0	0		29	10	0
Quicksilver							
Flasks, 75 lbs. warrants	6	11	0		6	12	6
Manganese per unit.							
Ore, c.i.f., U.K. ports							
1st quality, 50 per cent. and upwards	0	0	11		0	1	1¾
2nd ,, 47 per cent. to 50 per cent.	0	0	10		0	1	0
3rd ,, 40 ,, 47 per cent.	0	0	8		0	0	11
Aluminium Per lb.					Per lb.		
98-99½ per cent.	0	1	4½		0	1	6
Nickel							
98-99 per cent. guaranteed	0	1	2		0	1	4

"THE MINING JOURNAL" SHARE LIST.

ABBREVIATIONS AND REFERENCES.—The following are the significations of the abbreviations and references which occur in the Share List:—*Ay*, Antimony; *A*, Arsenic; *Bl*, Blende; *Bz*, Borax; *C*, Copper; *D* Diamond; *G*, Gold; *I*, Iron; *L*, Lead; *M*, Mundic; *N*, Nitrates; *P*, Phosphates; *Q*, Quicksilver; *R*, Ruby; *S*, Silver; *S-l*, Silver-lead; *Sul*, Sulphur; *T*, Tin; and *Z*, Zinc. * in the "Amount of Share" column of British Mines signifies that the mine is conducted on "Cost Book" principles; ‡ in the "Head Office" column of African Mines signifies that the address given is not that of the head office but of a sub, or transfer office; and †, following the names of African Mines, signifies that they are subject to the Limited Liability Law of the South African Republic.

*** The following is by far the most complete and comprehensive list of mines, in whose shares business is being currently transacted, published. Additions will be made from time to time as occasion requires. Every effort is made to ensure accuracy, and Secretaries of Companies, Share Dealers, and our readers generally, are cordially invited to co-operate with us to this end, by notifying us of any errors that may at any time occur. We desire it to be understood that while our Share List will almost invariably be found correct, we do not hold ourselves responsible for any loss or inconvenience that may arise from possible inaccuracies.

AFRICAN MINES.

Name.	Closing Price, Nov.13, 1896	Closing Price Nov. 6, 1896.	Am't. of Share £	When last XD and Dividend.	Called up Per Share. £ s. d.	Amount of Stock or No. of Shares Issued.	Situation of Mine.	Head Office.
Abbott's Con. Reefs	7/16 9/16	5/16 7/16	1 0	—	1 0 0	—	De Kaap	Broad Street Avenue
Adler Consolidated	3/4 1	7/8 1	1 0	2/ Oct. 15, 96	1 0 0	250,000	Transvaal.	1, Moorgate place.
African Estates......	1 3/8 1 3/4	1 1/4 1 3/8	1 0	2/& rtsOc.16 95	1 0 0	438,600	De Kaap...	3, Copthall-buildings
" Gold Rcvry.	3/4 1	7/8 1 1/8	1 0	rts Oct 30 '95	1 0 0	175,000	—	23, College Hill,
Afrikander ...... G	7/8 1 1/8	1 1/8 1 3/8	1 0	rts May 24 '95	1 0 0	40,000	Transvaal.	23, College Hill
Alexandra Estate G	1/4 3/8	7/16 9/16	1 0	—	1 0 0	225,000	Rand	16, George street
Angelo	3 5	4 4 1/2	1 0	—	1 0 0	175,000	—	Winchester House
Anglo-French Exp.	3 3/16 3 5/16	3 3/8 3 1/2	5 0	3/- Sept. 30 '96	5 0 0	30,300	S. Africa	3, Princes street
" Matabeleland	3/4 1	1 3/4 2	1 0	—	1 0 0	39,750	Matabld.	Winchester House.
Appantoo .... G	—	—	1 0	—	1 0 0	77,885	West Cost	Dashwood House.
Aurora .... G	1 1 1/4	1 1 1/4	1 0	5% Mar.'93	1 0 0	65,000	Rand	8, Old Jewry.‡
" West United.	1 1 1/4	1 1 1/4	1 0	—	1 0 0	100,000	"	7, Lothbury
Balkis Eersteling G	/9 1/3	1/ 1/6	10/	—	0 10 0	520,000	Transvaal	85, Gracechurch-st.
" Land	3/9 4/3	4/3 4/9	10/	1/ Feb. 13, '96	0 0 0	520,000	"	"
Bantjes Consol ...G	2 3/16 2 5/16	2 1/4 2 3/8	1 0	rts Sep 24 '95	1 0 0	83,000	"	15, Geo. st., Mn Ho.
Barnato Consol ...	1 3/4 1 7/8	1 3/4 1 7/8	1 0	—	1 0 0	1,000,000	—	7, Lothbury.
Barrett.. ....G	10/6 11/6	10/ 11/	10/	—	0 9 0	207,496	De Kaap	17, Basinghall-street
Bechuanaland Exp.	1 1/16 1 3/16	1 1/8 1 1/4	1 0	rts Jy 24 '95	1 0 0	400,000	Bechuana.	19, St.Swithin's-lane
" Trad'g Assoc.	7/8 1	7/8 1 1/8	1 0	1/6 July 15,'96	0 10 0	91,307	"	72, Basinghall street
Big Golden Quarry	/3 /6	/3 /6	5/-	—	0 5 0	483,226	Kaap Rivr	Warnford Court,
Block "B" Lang.	1 1 1/4	1 1/8 1 3/8	1 0	—	1 0 0	535,000	Rand	8, Princes-st., E.C.‡
Bonanza	3 3 1/8	2 11/16 2 13/16	1 0	—	1 0 0	200,000	Turffont'n	120, Bishopsgate-st.
Brit. S. A. Char. ..	2 1/4 2 3/8xr	2 3/8 2 1/2	1 0	x rts Nov 12 96	1 0 0	1,999,750	S. Africa	15, St. Swithin's-lane
Buffelsdoorn...... G	1 3/4 1 7/8	1 7/8 2	1	16/- Nv. 28 '95	1 0 0	250,000	Potchefstr	7, Lothbury.
" Central	1/8 3/4	1/8 3/8	1 0	—	1 0 0	—	—	8, Old Jewry
" Consolidated	7/16 9/16	7/16 9/16	1 0	—	1 0 0	225,000	—	Warnford Court
Cape Asbestos	3/4 1	3/4 7/8	1 0	—	1 0 0	50,311	Orange Rv	19, St. Swithin's-lane
" Copper C	2 7/16 2 9/16	2 3/8 2 1/2	2 0	2/ June 12, '96	2 0 0	300,000	Cape Col.	9, Queen-street-place,
" 6% Pref. ...	2 3/8 2 7/8	2 3/8 2 7/8	2 0	2/ June 12, '96	2 0 0	45,000	"	"
Cassel Coal..........	1 7/8 2	1 7/8 2 xd	1 0	1/6 Oct. 29 '96	1 0 0	75,000	Johanbrg.	83, Cannon-street.
Cen. de Kaap	/9 1/3	/9 1/3	5/-	—	0 5 0	240,000	De Kaap	Palmerston Bldgs
" Roodp't Deep	1 1/4 1 1/2	1 3/8 1 5/8	1 0	—	0 0	220,000	—	120, Bishopsgate st.
Champ d'Or...... G	1 1 1/4	1 1 1/4	1 0	3/2 Feb. 27 96	1 0 0	116,016	Rand	8, Old Jewry, E.C.
Charterland G.F...	3/8 5/8	3/8 5/8	1 0	—	1 0 0	150,000	—	19, S. Swithin's lane
Chimes West	3/4 1	7/8 1 1/8	1 0	—	1 0 0	150,000	—	Winchester Ho.
City and Sub.New G	3 3/4 4	3 7/8 4 1/8 xd	4 0	2/- Oct. 29, '96	4 0 0	340,000	Rand	Gresham Ho.
Con. Bultfontein D	31/ 33/	30/ 32/	1 0	9d. July 15,'96	1 0 0	721,500	Griqualand	62, Lombard-st.
Con. Deep Levels G	3 3/4 4 1/4	3 3/4 4 1/4 xd	1 0	6/- Oct. 29, 96	1 0 0	187,250	Transvaal	30, St. Swithin's-lane
Con. G. Fields S A.	8 7/16 8 9/16 xd	9 1/4 9 3/8	1 0	15/ Nov 12 '96	1 0 0	1,250,000	S. Africa	8, Old Jewry,
Do. 6% Pref.	1 1/16 1 3/16	1 1 1/8	1 0	7/1-5d Jne26'96	1 0 0	1,243,959		"
Do. 5 1/2% Deben...	107 109	107 109	5 0	5 1/2% July1,'96	5 0 0	600,000	"	"
Crown Deep ......G	9 10	9 10	1 0	—	1 0 0	250,000	Rand	120, Bishopsgate-st.
" Reef ......G	10 1/4 10 1/2	10 3/8 10 5/8 xd	1 0	12/ Oct. 29, '96	1 0 0	120,000	"	"
DeBeers Consol. D	29 3/16 29 5/16	28 15/16 29 1/16	5 0	22/- July15 '96	5 0 0	789,791	Kimberl'y	62, Lombard-street.
Do. 5% 1st Deb....	105 108	105 107	1 0	5% July'1 '96	1 0 0	£3,500000	"	"
Do. 4 1/2% Bul. Ob.	99 101	99 101	1 0	4 1/2% Oct. 1,'96	1 0 0	£720,000	"	"
Driefontein	2 1/8 2 3/8	2 1/4 2 1/2	1 0	—	1 0 0	175,000	—	Winchester Ho,
Durban Roodept.G	6 1/8 6 3/4	6 1/2 6 3/4	1 0	3/- Sept.15'96	1 0 0	£125,000	Rand	28, Leadenhall-bldgs
" Deep.........	3 1/4 3 3/4	3 1/2 3 3/4	—	—	—	—	—	
Eastleigh ....G	9/16 5/8	9/16 11/16	1 0	rts May 14 '96	1 0 0	240,000	Klerksdrp	52, Leadenhall Street
East Orion..	1/16 3/16	1/16 3/16	1 0	—	1 0 0	275,000	Rand	8, Old Jewry.
" Rand......... G	4 7/16 4 9/16	4 7/8 5	1 0	—	1 0 0	570,000	"	170, Winchester-ho.
Exploration	2 7/16 2 9/16	2 1/4 2 5/8	1 0	rts June 26 '96	1 0 0	143,000	S. Africa	30, S. Swithin's-ln.‡
Exploring L & M...	15/16 1 1/16	15/16 1 1/16	1 0	2/ Dec. 16, '95	1 0 0	216,215	"	19, "
Ferreira ....G	18 18 1/2	18 19	1 0	25/ Aug. 25'96	1 0 0	45,000	Rand	120, Bishopsgt st. Wn‡
French Rand	1 3/4 2	2 1/16 2 3/16	1 0	—	1 0 0	480,000	Rand.........	28, Austin Friars.
Geldenhuis Deep G	3 7/8 4 1/8	3 3/4 4 1/4	1 0	—	1 0 0	265,000	Transvaal .	30, St. Swithin's-lane
" Estate G	3 1/8 3 1/4	3 1/8 3 3/8 xd	1 0	2/6 Oct. 29 '96	1 0 0	187,500	Rand	120, Bishopsgt st, Wn‡
" Main Reef	11/16 13/16	11/16 13/16	1 0	2/ Feb. 13 96	1 0 0	150,000	"	Warnford Court, E.C
George Goch ...G	1 5/8 1 3/4	1 11/16 1 13/16	1 0	—	1 0 0	100,000	"	Johannesburg.
Ginsberg New ...G	1 1/8 1 1/4	1 3/4 2	1 0	—	1 0 0	130,000	Drietfon .	Warnford Court, E.C‡
Glencairn ....G	2 2 1/8	2 3/4 2 1/4	1 0	rts Sep. 30 '96	1 0 0	200,000	Rand	2, Drapers-gardens.
Golden Dove	1 1 1/2	1 1 1/8	1 0	—	1 0 0	60,000	Natal	65, Chancery Lane.
Gld. Fls. Deep...G	6 3/4 7	6 1/8 6 3/8	1 0	—	1 0 0	600,000	S. Africa	8, Old Jewry.
" of Lydenb'rg	1 7/8 2 1/8	1 7/8 2 1/8	1 0	—	—	—	Lydenb'rg	7, Lothbury.
" of Mashonld.	1/8 1/4	1/8 1/4	1 0	—	1 0 0	200,000	Mashonld.	19, St. Swithin's-ln.
" Tirra d'l F'go	14/ 14/6	14/ 14/6	—	—	—	—	—	75, Leadenhall Street
Graskop ....G	2/9 3/3	3/- 3/6	5/-	2 1/2% Mar.'92.	0 5 0	400,000	Lydenburg	2, Tokenhouse Bldgs
Gt. Estrn. Colliery	7/8 1	7/8 1	1 0	—	1 0 0	376,666	Grootolei	Gresham House,
Griqualand W....D	7 7/8 8 1/8	7 7/8 8 1/8	10 0	4/ July 15, '96	10 0 0	105,700	Transvaal .	62, Lombard-street
Heidelbg. Est. Ex:	3/16 5/16	1/4 3/8	1 0	—	—	—	Heildelbg.	
Henderson's Trans	1 5/8 1 7/8	1 15/16 2 1/16	1 0	—	1 0 0	250,000	Zoutpanbg	85, Gracechurch st.
Henry Nourse ...G	6 3/8 6 5/8	6 1/4 6 3/4	1 0	—	1 0 0	100,000	De Kaap...	Warnford-court.
Jb'g Con. Invst (N)	2 7/16 2 9/16	2 11/16 2 13/16	1 0	2/ Sep. 30, '96	1 0 0	650,000	—	7, Lothbury.
" Pioneer	8 1/2 9	7 1/2 8 1/2	1 0	8/ Oct. 15,'96	1 0 0	21,000	Rand.........	Johannesburg.
Jubilee ....G	7 3/4 8 1/4	8 8 1/4 xd	1 0	4/ Oct. 29 '96	1 0 0	30,000	"	8, Old Jewry.†
Jumpers ....G	4 3/8 4 5/8	5 5 1/4	1 0	6/- Mar. 27 '96	1 0 0	100,000	"	120, Bishopsgt st, Wn‡
" Deep......	4 5	5 6	1 0	—	1 0 0	300,000	"	30, S. Swithin's lane
Kimberley .. ..D	1/16 3/16 pm	1/16 3/16 pm	1 0	1/ June 26, '96	0 10 0	98,672	Kimberley	19, Finsbury circus
" Rdpt....	2 2 1/4	1 3/4 2	1 0	—	1 0 0	125,008	"	2, Drapers-gardens.
Kleinfontein Cen.	1/2 3/4	1/2 3/4	1 0	—	1 0 0	225,000	E. Rand ...	Winchester House
Klerksdorp	7/9 9/3	7/3 7/9	10/-	—	0 10 0	400,000	Klerksdorp	110, Cannon St.
Knight's Deep	1 1/4 1 3/4	1 1/4 1 3/4	1 0	—	1 0 0	295,194	Rand...... ...	8, Old Jewry
Koffyfontein......D	11/16 13/16	11/16 13/16	1 0	x.rts.Jun10'96	1 0 0	125,000	Jacobsdaal	6, Gt. St. Helen's.
Lancaster	2 1/16 2 3/16	2 1/8 2 1/4	1 0	—	1 0 0	226,500	Luip. Vlei	120, Bishopsgt st. Wn
Langlaagte Est. G	4 1/8 4 3/8	4 1/2 4 3/4	1 0	3/ July 30 '96	1 0 0	470,000	Rand.........	69, Holborn Viaduct
" Royal	1 1/4 1 3/8	1 3/8 1 5/8	1 0	rts. Mar. 6 '96	1 0 0	100,000	"	2, Drapers-gardens.
" Star...	1/2 3/4	3/4 1	1 0	—	1 0 0	170,000	"	
Lisbon-Berlyn ...G	4/9 5/3	4/9 5/3	2/6	—	0 2 6	283,233	Lydenburg	Suffolk House,
Lon.Paris Fin & M.	7/8 1	15/16 1 1/16	1 0	—	1 0 0	500,000	—	53, Old Broad Street
London & S. A. Ex.	15 15 1/2	15 1/4 15 3/4	10/	4/- Sept.30 '96	0 10 0	100,000	S. Africa ...	19, Finsbury-circus.
Luipaards Vlei......	1 5/16 1 7/16	1 1/16 1 3/16	1 0	6% Mar.'90	1 0 0	319,093	Rand...... ...	Warnford-court.‡
Lydenburg Estate.	1 1/16 1 3/16	1 3/16 1 5/16	1 0	—	1 0 0	190,000	Lydenburg	85, Gracech. Street
" M'g. Est.	4 3/8 4 5/8	4 3/8 4 7/8	1 0	—	1 0 0	300,000	"	120, Bishopsgate St.
Main Reef (New)G	7/8 1 1/8	1 1/2 1 3/4	1 0	—	1 0 0	111,500	Rand.........	15, George St., Mn H
Marievale Nigel ...	5/8 7/8	5/8 7/8	1 0	—	1 0 0	250,000	"	
Mashon. Agency...	1 9/16 1 11/16	1 9/16 1 11/16	1 0	2/ Ap. 16 '96	1 0 0	100,000	Mashonald	8, Old Jewry, E.C.
" Central...	11/16 13/16	13/16 15/16	1 0	—	1 0 0	150,000	"	
Matabelel'd G. R't	3 1/4 3 3/8	3 1/4 3 1/2	1 0	—	1 0 0	110,000	Matabelel'd	3, Copthall-buildings
May Con. (New) G	2 1/4 2 3/8	2 5/16 2 7/16	1 0	2/- Mar. 12 96	1 0 0	236,500	Rand.........	4, Lothbury.‡
Meyer & Charl....G	5 5 1/4	4 7/8 5 1/8	1 0	5/ Feb. 13 96	1 0 0	75,020	"	1, Crosby Square.‡
Minerva	1/2 5/8	9/16 11/16	1 0	—	1 0 0	150,000	"	Winchester House.
Mines Selection ...	7/8 1	7/8 1	1 0	—	1 0 0	100,000	—	33, Br'd St. Avenue.
Modderfontein.. G	4 1/4 4 1/2	4 1/8 4 3/8	1 0	rts Aug. 28 '96	1 0 0	200,000	Rand.........	13, George Street
" "B" Extensn.	15/16 1 1/16	1 1 1/8	1 0	—	1 0 0	325,000	—	28, Austin Frias
Molyneux Consoli.	1 1 1/4	1 1/8 1 3/8	1 0	—	1 0 0	220,000	Modderftn	120, Bishopsgate st
Moodies ....G	1/2 5/8	5/8 11/16	1 0	-/4 May '90	1 0 0	240,000	"	Gresham House.
Mozambique.........	1 5/16 1 7/16	1 1/4 1 3/8	1 0	—	1 0 0	400,000	S.E. Africa	13, Austin Friars.
Namaqua C	1 7/8 2 1/8	1 3/8 1 7/8	2 0	3/- July 15 '96	2 0 0	94,351	Namaquald	34, Leadenhall-bldgs.
New African	2 2 1/4	2 2 1/4	1 0	5/ July 15 '96	1 0 0	190,000	—	33, Hatton Garden.
" Bultfontein D	1 1/4 1 3/8	1 5/16 1 7/16	1 0	1/- July 20 '96	1 0 0	150,000	Griql'd. W.	6. Drapers Gardens
" Chimes...... G	5/8 7/8	3/4 1	1 0	1/- Mar.27 '96	1 0 0	100,000	Rand.........	8, Old Jewry, E.C
" Comet	1 1/8 1 3/8	1 3/4 2	1 0	—	1 0 0	175,000	Heidelburg	Winchester-house.
" Crœsus...... G	7/8 1	1 1 1/16	1 0	rts Apr 17 '95	1 0 0	265,000	Langlaagte	120, Bishopsgt.st., Wn
" Heriot ......G	8 1/8 8 3/8	8 1/4 8 1/2	1 0	4/ Oct. 29, '96	1 0 0	88,750	Rand.........	96, Gresham Ho EC
" Jagersf. ...D	9 7/8 10	9 5/16 9 7/16	5 0	5/ Sep. 30, '96	5 0 0	200,000	Transvaal .	5, Copthall-buildings
" Kleinfontein G	2 3/8 2 5/8	2 5/8 2 7/8	1 0	rts. Sep. 30 '96	1 0 0	82,500	Rand.........	Winchester House
" Midas	1 11/16 1 13/16	1 1/2 1 3/4	1 0	rts.Jan. 16,'96	1 0 0	150,000	Mid'le Vlei	120, Bishopsgt-st, W
" Primrose ...G	4 4 1/4	4 1/8 4 3/8	1 0	rts.Sep. 30,'96	1 0 0	278,750	Rand.........	2, Draper's-gardens.
" Rietfontein G	2 1/8 2 3/8	2 1/4 2 1/2	1 0	—	1 0 0	160,000	"	Warnford-ct., E.C.
" S.Augustine D	2/6 3/	2/6 3/	1 0	—	0 19 6	299,137	Griqu'ld W	30-1, St. Swithin's-l.
" Spes Bona...G	7/8 1 1/8	1 1 1/4	1 0	—	1 0 0	113,701	Rand.........	24, N. John-st., E.C
" Steyn Estate	1 1/8 1 1/4	1 3/16 1 5/16	1 0	—	1 0 0	125,000	Heidelber	19 Bury Street pl.

AFRICAN MINES—(*Continued*).

Name.	Closing Price, Nov.13, 1896	Closing Price, Nov. 6, 1896.	Am't. of Share £	When last XD and Dividend.	Called up Per Share.	Amount of Stock or No. of Shares Issued.	Situation of Mine.	Head Office.
Nigel .... G	2 1/8 2 3/8	2 1/4 2 3/8	1 0	rts Aug 10 '95	1 0 0	160,000	Rand.........	96, Gresham Ho.,
" Deep ......G	13/16 1 1/16	1 1 1/8	1 0	—	1 0 0	195,000	Heidelberg	8 Old Jewry
North Charterland	5/ 7/ nom	5/- 7/- nom	1 0	—	1 0 0	800,000	—	Winchester House
" Randfontein	1 1/8 1 1/4	1 1/8 1 3/8	1 0	—	1 0 0	235,000	—	8, Princes street
Nourse Deep.........	3 1/4 3 3/4	3 1/4 3 3/4	1 0	—	1 0 0	375,000	Rand.........	120, Bishopgt. st., W
Oceana Consoldatd	1 1/8 1 1/4	1 1/8 1 1/4	1 0	—	1 0 0	—	Wtrbg Lyn	13, Austin Friars,
" Develpmnt	3/8 1/2	3/8 1/2	1 0	—	1 0 0	50,000	Heidelbrg.	
" Minerals ...	7/16 9/16	3/8 5/8	1 0	—	1 0 0	500,000	"	"
Orange F.S.E. ...D	2 1/4 3 1/4	2 1/4 3 1/4	1 0	1/6 Apr.,29, 96	1 0 0	284,000	Orange F.S.	10, Moorgate-street
Orion (New).....G	13/16 15/16	13/16 15/16	1 0	10% Aug. '95	1 0 0	30,000	Rand.........	8, Old Jewry.
Paarl Central ... G	1 1 1/8	1 1 1/8	1 0	—	1 0	138,750	Transvaal .	120, Bishopgt st. W
Pardy's Mozambq.	1 1 1/4	1 1 1/4	10/	rts Mar 96	0 10 0	60,000	S.E. Africa	Broad St. Avenue,
Piggs Peak ......G	5/8 7/8	5/8 7/8	1 0	—	0 1 0	200,000	Swazielnd.	4, Sun Court,
Porges Randfontn.	7/8 1	15/16 1 1/16	1 0	2/ Feb. 13 '96	0	437,500	Rand.........	1, Bank Buildings
Potchefstroom... G	5/16 7/16	5/16 7/16	1 0	—	1 0 0	389,750	Potchefst...	19, Bury-st., E.C.
Princess Estate G	2 1/8 2 3/8	2 3/8 2 1/2	1 0	—	1 0 0	125,000	Rand.........	33, Cornhill, E.C.
Rand Central Ore	1 1 1/4	1 1/8 1 1/4	1 0	25 p c Aug. 95	1 0 0	115,000	—	8, Princes-street, E.
Randfontein ......G	2 2 1/8	2 3/16 2 5/16	1 0	xr June 12, 96	1 0 0	2,000,000	Rand.........	1, Bank Buildings.
Rand Mines ...... G	23 1/2 24	23 3/8 23 3/4	1 0	—	1 0 0	332,793	"	120, Bishopsgt.st., W
Rand-Rhodesia Ex	5/8 7/8	5/8 7/8	1 0	10 p.c. Oct, '95	1 0 0	25,000	R&Rhodesa	123, "
Rhodesia Ex & Dv.	4 1/2 5	4 3/4 5 1/4	0	—	1 0 0	50,000	Mt & Mash'l	15 & 16, Geo. St.
Robinson(SA)Bank	4 1/2 5	4 1/2 5	4 0	1/ Apl. 15, 96	4 0 0	750,000	—	8, Prince's-street
" Deep......	6 7	6 1/2 7 1/4	1 0	—	1 0 0	500,000	M'nR'fR'nd	120, Bishopsgate st.
" Diamond	5/8 7/8	5/8 7/8	1 0	—	1 0 0	350,000	Kaal Valley	8, Prince's street
" Gold......	8 1/8 8 3/8	8 1/4 8 1/2	5 0	5/ July 30 '96	5 0 0	550,000	M. Rf.'rand	28, Austin Friars
" Randftn.	7/8 1	15/16 1 1/16	1 0	—	1 0 0	517,000	Rand.........	8 Prince's-street.
Roodepoort Deep	1 1/4 1 1/2	1 1/4 1 3/4	1 0	—	1 0 0	170,000	"	8, Old Jewry, E.C.
Roodepoort Un. G	3 3/8 3 7/8	3 7/8 4 1/8	1 0	2/ July 30 '96	1 0 0	130,000	"	Warnford-court.‡
Rose Deep............	3 1/4 3 1/2	3 1/4 3 3/4	1 0	—	1 0 0	300,000	M. Rf.'rand	30-31, S. Swith'n l.
Rothery Block......	1/8 1/4	1/8 1/4	1 0	—	—	—	—	55, Bishopsgate st.
Sacke Estates	1 1 1/4	1 1 1/4	1 0	2/ June 12 '96	1 0 0	225,000	—	19, Bury Street.
St. Helen's Devel.	2 1/8 2 3/8 nom	2 1/8 2 3/8 nom	1 0	—	1 0 0	47,950	S. Africa ...	13, S. Helen's Pl.
Salisbury New ...	3 3 1/4	3 1/4 3 1/2	1 0	—	1 0 0	99,000	Rand.........	96, Gresham Ho.
Sheba ....G	1 3/4 1 13/16	1 3/4 1 7/8	1 0	1/- Sept.30 '96	1 0 0	850,000	Lydenburg	18, S. Helen's place
Simmer & Jack...G	4 4 1/4	4 1/4 4 1/2	5 0	2/ Aug 14 95	5 0 0	940,000	Rand...... ..	8, Old Jewry.
S.A GoldTrustNew	6 1/4 6 3/4	6 6 1/4	1 0	7/6 Jun 26 '96	1 0 0	250,000	S. Africa ...	"
Spitzkop (New) G	3/8 5/8	11/16 3/4	1 0	—	1 0 0	99,070	Lydenburg	15, Bishopsgt.st., W
Stanhope ....G	3/8 7/8	3/8 7/8	1 0	1/- Sept 30 '96	1 0 0	34,000	Rand... ...	96, Gresham Ho.
Sutherland R, ...G	2/ 3/	2/ 3/	1 0	—	1 0 0	220,000	Zoutpan'bg	Dashwood Ho.
Tati Concessions ...	1 3/16 1 5/16	1 1/4 1 3/8	1 0	rts Jy. 22 '95	1 0 0	392,000	—	Gresham House.
Trans. Coal Trust...	1 7/16 1 9/16	1 3/8 1 5/8	1 0	1/-Apr. 29, 96	1 0 0	439,965	Rand......	Broad-st. House,
" Consolidatd	1 3/8 1 5/8	1 1/4 1 3/8	1 0	—	1 0 0	485,131	Transvaal	120, Bishopsgt st. W
" Est. & Dev.	11/16 13/16	5/8 3/4	1 0	—	1 0 0	428,600	"	10, New Broad-st.
" Gold Fields	2 7/8 3 1/8	3 3 1/4	1 0	8/- Apr. 15 '96	1 0 0	135,000	S. A. R......	120, Bishopsgt.st. W
" Land.........	5/16 7/16	5/16 7/16	1 0	—	1 0 0	79,915	Transvaal .	35, Abchurch Lane.
Treasury............G	1 1/2 2	1 3/4 2	4 0	12 1/2% Sep.'94	4 0 0	135,000	Rand.........	Warnford Court.
United Exploratn.	1/2 3/4	3/4 1	1 0	—	1 0 0	250,000	—	120, Bishopsgate St.
" Ivy Reef......G	3/4 1	5/8 7/8	1 0	/6 June 26 '96	1 0 0	45,000	Transvaal .	110, Cannon-street
" Langlaagte(N)G	1/2 3/4	1/2 3/4	1 0	—	1 0 0	146,000	Rand.........	85, Gresham Ho.
" Mines Builf. D	1 1 1/2 nom.	1 1 1/2 nom	1 0	1/ Aug. 28, '96	1 0 0	125,000	Kimberley	120, Bishopsgate St.
Van Ryn .... G	3 5/8 3 7/8	3 7/8 4 1/8	1 0	4/- Jan. 16 '96	1 0 0	160,000	Rand.........	18, St. Swithin's-ln.
" North ...	3/8 5/8	3/8 5/8	1 0	—	1 0 0	116,091	—	"
" West......	1 3/8 1 7/8	1 3/4 2	1 0	—	1 0 0	120,000	Rand	
Vesta	3/8 5/8	1/2 3/4	1 0	—	1 0 0	130,000	Rand	Winchester House
Village Main Reef	4 7/8 5 1/8	5 1/8 5 3/8	1 0	rts June 26 '96	1 0 0	177,000	"	8, Old Jewry.
Vogelstruis Estate	3 7/8 4 1/8	3 7/8 4 1/8	1 0	—	1 0 0	200,000	"	Winchester House,
" Cons. Deep ...	1 1/8 1 3/8	1 1/8 1 3/8	1 0	—	1 0 0	327,750	"	16, Geo. St. Mn. Ho
Wassau ....G	1 1/4 1 3/8	1 7/16 1 9/16	1 0	—	1 0 0	100,000	Gold Coast	147, Cannon-street
Wemmer ....G	8 8 1/4	8 8 1/4	1 0	10/ Apr. 29 96	1 0 0	55,000	Rand.........	19, Bury-street,‡
Western Nigel......	3/8 5/8	3/8 5/8	1 0	—	1 0 0	207,000	Main Reef	Suffolk House,
West Rand.........G	1 3/8 1 1/2	1 5/16 1 7/16	1 0	—	1 0 0	240,000	Rand.........	13, Geo. St., Mans Ho.
Willoughby's Con.	1 1/8 1 1/4	1 3/16 1 5/16	1 0	—	1 0 0	700,000	Mashonald	3, Copthall-bldg.
Witwatersrand G	4 3/8 4 7/8	4 7/8 5 1/8	1 0	—	1 0 0	250,000	Rand.........	19, Bury-st., E.C.
Wolhuter ....G	4 3/8 4 7/8	4 7/8 5 1/8	1 0	rts Apr 26 '94	1 0 0	130,000	"	Warnford-court,‡
Worcester ....G	3 7/8 4 1/8	4 4 1/4	1 0	3/- Aug. 28 '96	1 0 0	90,727	Rand.........	8, Old Jewry.‡
Zambesia Explora.	1 7/8 2 1/8	2 2 1/4	1 0	—	1 0 0	65,000	Transvaal .	30-31, Clement's lane

BRITISH MINES.

Name.	Closing Price, Nov.13, 1896	Closing Price, Nov. 6, 1896.	Am't. of Share £	When last XD and Dividend.	Called up Per Share. £ s. d.	Amount of Stock or No. of Shares Issued. £	Situation of Mine.	Head Office.
Basset	3/4 1	14/ 15/	1 0	—	1 0 0	65,000	Cornwall	Redruth.
Blue Hills ......CT	1/2 3/4	1/ 2/	*	2/- May,'81	6 19 5	5,353	"	Camborne.
Carn Brea & Tinct T	2/ 2/6	1/ 2/	1 0	2/6 Dec.,'93	22 5 5	—	"	Carn Brea.
Devon Gawton CA	20/ 25/	15/ 20/	1 0	—	0 15 0	25,000	Tavistock	8, Finsbury circus,
" Gt Cons. CA	3/4 1	3/4 1	5 0	1/6 May '95	2 0 0	10,240	Devon ...	"
Dolcoath ....T	17/ 18/	16/6 17/	1 0	—	1 0 0	188,000	Cornwall	Camborne.
"	7/6 8/6	5/ 5/6	1 0	—	0 10 0	25,000	"	"
Drakewalls CTM	/6 1/	/6 1/	5/	—	0 2 0	61,858	"	Dashwood House.
East Pool ......AT	18/ 20/	18/ 19/	*	1/6 Sept,'94	0 9 9	6,400	Cornwall	Illogan.
Great Laxey......L	1 1 1/2	1 1 1/2	4 0	5/- Apr.,'93	4 0 0	15,000	I. of Man	Gresham House.
Halkyn	10 11	10 11	1 0	2/6 June 26'96	1 0 0	10,000	Flint	Chester.
Isle of Man L	5 1/4 5 3/4	5 5 1/2	5 0	3/- June 12 '96	5 0 0	11,000	I. of Man	"
Killifreth ....T	—	5/9 6/3	*	11/6 Nov.,'94	5 15 6	6,000	Cornwall	Truro.
Leadhills L	1 1 1/8	1 1 1/8	6 0	1/6 Apr. 29 '95	6 0 0	20,000	Lanarksh.	30, Finsbury-circus.
Levant ....CT	3 3 1/4	1 1/4 2	*	4/- Nov.,'94	11 9 6	2,500	Cornwall	Penzance.
Polberro ....T	1/4 1/2	4/ 5/	*	—	2 1 5	18,000	S.Agnes,Cl.	37, Walbrook.
So. Condurrow TC	1/ 2/	1/6 2/6	*	3/6 Apr. '93	7 17 6	6,123	Cornwall	29, Great St. Helens
" Crofty TA	2/ 2/6	1/ 1/5	*	—	17 10 6	5,769	"	Pool, Cornwall.
Weardale L	2/	8/9	4 0	1/3 Oct. '90	1 10 0	50,000	Durham...	3, Lombard-court.
West Kitty ......T	2 1/8 2 1/2	2 2 1/4	*	2/- Dec, '94	1 2 0	6,000	Cornwall	37, Walbrook.
Wheal Agar ...TA	1/ 2/6	1/6 2/6	*	2/6 Aug.'88	23 15 2	6,000	"	Redruth.
" Friendly..T	1/ 1/6	1/ 1/6	*	—	0 12 9	10,000	"	2, Copthall Bldgs, E.C
" Grenville T	3 1/4 4 1/2	3 1/4 4 1/4	*	3/- Nov 28 '95	18 2 0	6,000	"	7, Union-court, E.C.
" Kitty......T	4/ 5/	5/6 6/	*	3/- Mar. '88	4 5 8	8,590	"	Truro.
" Metal&F.T	5/6 4/	3/ 3/6	*	—	0 3 0	60,000	"	14 Broad-street Av.

INDIAN AND ASIATIC MINES.

Name.	Closing Price, Nov.13, 1896	Closing Price, Nov. 6, 1896.	Am't. of Share	When last XD and Dividend.	Called up Per Share.	Amount of Stock or No. of Shares Issued.	Situation of Mine.	Head Office.
Balaghat Mysore G	/9 1/3	2/6 3/	1 0	—	1 6 8	160,000	India	6-7, Queen-street-pl.
Burma Ruby......R	11/16 13/16	3/8 5/8	1 0	—	0 18 0	298,370	Burmah...	Suffolk House, E.C.
Champion Reef...G	7 3/8 7 5/8	7 7/16 7 9/16	1 0	4/6 Aug. 13 '96	1 0 0	211,645	India	6-7, Queen-street-pl.
Colar Central ...G	—	1/6	1 0	—	1 0 0	200,000	"	Dashwood Ho., E.C.
Coromandel...... G	2 2 1/4	2 1/8 2 1/4	1 0	—	1 0 0	120,000	"	6-7, Queen-st.-place
GoldFldsMysore G	20/ 21/	20/ 21/	1 0	1/- July '92	1 0 0	220,000	"	6-7, Queen-street pl.
Kadur Mysore......	6/3 6/9	6/3 6/9	5/	—	0 5 0	400,000	India	Copthall House, E.C
Kempinkote GdFd	1/3 1/9	1/3 1/9	5/	—	0 4 0	575,218	"	6-7, Queen-st.-place
Mysore .... G	7 5/16 7 7/16	7 7/16 7 9/16 xd	1 0	7/ Oct. 29 '96	1 0 0	248,354	"	6-7, Queen-street pl.
" Harnballi ...G	—	-/6 1/-	1 0	—	0 18 6	100,007	"	13, Copthall Avenue
" Reefs ...G	6/0 7/0	6/6 7/6	1 0	—	0 19 6	160,000	"	6-7, Queen-street-pl.
" West(N)G	11/16 13/16	11/16 13/16	1 0	rts. Jan. 16 '95	0 19 6	127,408	"	2, Gt. Winchester St
" Wynaad G	9/16 11/16	9/16 11/16	1 0	rts. Jan. 16 '96	0 19 6	135,000	"	
Nine Reefs ......G	5/9 6/3	5/6 6/	10/	—	0 3 6	250,000	"	6-7, Queen-street-pl.
Nundydroog...... G	3 3/8 3 1/2 xd	3 3/8 3 5/8	1 0	2/- Nov. 12 '96	1 0 0	200,000	"	
Ooregum (Df.O.)G	2 13/16 2 15/16	2 13/16 2 15/16	1 0	2/ July 15 '96	1 0 0	145,000	"	
" (10% Pref.).	3 7/16 3 9/16	3 3/8 3 5/8	1 0	4/ July 15 '96	1 0 0	107,011	"	
" (10% Pref.).	2 1/8 2 3/4	2 1/8 2 3/4	1 0	4/ July 15 '96	0 5 0	12,989	"	
Pauang Kabang T	1/16 3/16	1/16 1/8	1 0	—	1 0 0	200,000	Malay Pn.	4a, Jeffrey's sq. E.C
" Corp.......	8/ 10/	8/ 10/	—	—	—	—		
Yerrakonda ......G	/3 /9	1/ 1/6	4/	—	0 3 0	187,491	Mysore ...	6-7 Queen-street pl.

"THE MINING JOURNAL" SHARE LIST—(Continued)

AUSTRALIAN AND NEW ZEALAND MINES.

Name	Closing Price, Nov. 13, 1896	Closing Price, Nov. 6, 1896.	Am't. of Share	When last XD and Dividend.	Called up per Share.	Amount of Stock or No. of Shares Issued.	Situation of Mine.	Head Office
Aladdin's Lamp G	2⅛ 2⅜	2⅜ 2⅞	1 0	2/ Sept. 30 '96	1 0 0	100,000	L'knN S.W	4-6, Throg. Avenue.
Anglo-Cont. Corp.	¾ 1	¾ 1	1 0	100 % '95	1 0 0	125,000	—	Worcester House.
" French Exp	¼ ½pm	¼ ½ pm	1 0	3/ Sept. 30, 96	0 10 0	40,000	W. Austral	3, Princes Street.
" Ger.Explor.	⅜ ⅛ pm	⅜ ⅛ pm	1 0	5/ Oct. 30 '95	0 10 0	40,000		"
Aroha ......G	11/16 13/16	⅝ ¾	1 0	—	1 0 0	100,000	N. Zealand	30, S. Swithin's Lane
Arrow Brownhill G	5/16 7/16	5/16 7/16	1 0	—	1 0 0	90,007	Cool., W.A.	4, Gt. Winchester St.
Assoc. Gold Mines	2 11/16 2 13/16	2⅝ 2⅞	1 0	bo June 26 '96	1 0 0	375,000	"	20, Bucklersbury
Australasian ......G	3/6 4/6	4/6 5/6	1 0	-/6 Mar., '92	1 0 0	10,000	Gymp. Q'ld	6, Queen-st. place
Australian C	—	—	20 0	1/-July 30 '96	7 7 6	218,315	S. Austral.	42, New Broad-street
Aus. Bro. Hill Con.	1/ 1/6	1/ 1/6	1 0	1/- June, '91	0 19 3	574,799	BarR.NSW	Winchester House.
Baker's Creek ...G	⅝ ⅞	⅝ ¾	1 0	1/- May '95	0 17 6	500,000	H'gveNSW	Hillgrove, N.S.Wale.
Bamboo Queen & R	¾ 1	⅞ 1⅛	1 0	—	1 0 0	—	Pilb., W.A.	38, Coleman Street.
Bayley's Rew..rd G	2/ 3/	2/6 3/6	1 0	-/4 Dec. 94	1 0 0	480,000	Coolgardie	F'sb'y. H. Bl'mf'ld St.
Big Blow ......G	4/ 5/	4/6 5/6	1 0	—	1 0 0	150,000	"	151, Cannon Street.
Black Flag Consld.	5/16 7/16	9/16 11/16	1 0	—	1 0 0	140,000	Coolgardie	4, Bishopsgte St. Wn
" Propty.	¼ ⅜	¼ ⅜	1 0	—	1 0 0	600,000	Coolgardie	1, Metal Exch. Bldgs
Blagroves Freehld	2/3 2/9	2/3 2/9	2/6	—	0 2 6	500,000	Corom. N Z	Dashwood House.
Blue Spur and G.G	10/- 11/-	10/ 11/ nom	1 0	3% Aug.13, '96	1 0 0	82,298	Otago, N.Z.	6-8, Great St. Helen's
Bonnie Dundee G	7/ 8/	7/ 8/	1 0	—	0 19 0	120,000	C. T.Q'land	16, S. Helen's Place
Brilliant......G	11/16 13/16	13/16 15/16 xd	2 0	/4 Oct. 25, '96	2 0 0	250,000	"	Charters Towers.
" Block...G	⅞ 1	⅞ 1	1 0	-/6 Dec. 16 '95	1 0 0	70,000	"	16, S. Helen's Place
" St.Geo.G	1⅝ 1⅞ xd	⅝ 1⅞	10/	/9 Nov. 9, '96	0 10 0	74,000	"	Charters Towers.
Brit. Brok. Hill S	⅜ ⅞	11/16 13/16	1 0	—	1 0 0	240,000	N.S. Wales	Dashwood Ho., E.C.
Broad Arrow	1/ 2/	1/ 2/	5/	—	0 5 0	400,000	W.Feather	57, Moorgate Street.
Broken Hill Prop.S	2 3/16 2 7/16	2 5/16 2 7/16 xd	8/	1/- Oct. 29, '96	0 8 0	960,000	N. S.Wales	3, Gt. Winchester st.
Brownhill Propty.	⅝ ⅞	⅝ ¾	1 0	—	1 0 0	62,500	Hannan's	4, Gt. Winchester st
Burbank's Birthd'y	1½ 1⅝	1¼ 1⅜	1 0	—	1 0 0	150,000	Coolgardie	Copthall House.
Cassidy Hill ......G	⅜ ⅝	⅜ ⅝	1 0	—	1 0 0	115,000	"	9-10, King Street, E.
Central Boulder G	⅜ ⅝	⅜ ⅝	1 0	—	1 0 0	93,522	K'lg'ri, WA	Wor'st'r Ho., Walbr'k
" Exp. & Invst.	1/16 3/16 dis	5/16 3/16 dis	1 0	4·8d Mar 12 '96	1 0 0	200,000	W. Austral	1, Met. Exchg. Bldgs
" " of W.A.	7/16 9/16	7/16 9/16	1 0	1/7½ Mar 27 96	1 0 0	122,000		2, "
Charters Tow. ...G	1/ 1/6	1/ 1/3	10/	—	0 9 6	200,000	Queensland	110, Cannon Street
Colonial Finance...	2⅛ 2⅜ pm	2⅛ 2⅜ pm	1 0	10/ Mar. 27 '96	0 10 0	21,140	W. Austral	139 "
" Gold Fields	par ¼ pm	par ¼ pm	1 0	—	0 12 6	75,250	"	70, Cornhill.
Con. G. M. of W.A.	¼ ⅜	¼ ⅜	1 0	—	1 0 0	246,779	Pilbarra ...	30, Moorgate Street.
" Murchison ...	5/16 7/16	5/16 7/16	1 0	—	1 0 0	225,533	Murc., W A	Broad Street House.
Contl. & W.A. Trust	⅜ ⅜	⅛ ⅜	1 0	—	1 0 0	104,467	W. Austral	"
Coolgardie Gold ...	¾ 1	¾ 1 xd	10/	x.rts.Jun12 '96	0 5 0	90,000	Cool. W.A.	Broad Street Avenue
" Mint & I.Kg.	13/16 1 1/16	13/16 1 1/16	1 0	—	1 0 0	150,000	"	30, S. Swithin's ln.
Crœsus So. United	⅝ ¾	⅝ ¾	1 0	—	1 0 0	115,000	Hann'sWA	Blomfield House
Crown United......	¾ 1	13/16 1 1/16	1 0	—	1 0 0	75,000	—	110, Cannon-st., E.C.
DayDawn B.&W.G	11/6 12/6	11/6 12/6	1 0	-/6 Sept.16,'96	1 0 0	498,400	"	16, S. Helen's Place
" P. C. G	2/6 3/	2/6 3/	1 0	-/6 Apr, '92	1 0 0	490,000	"	Winchester Ho., E C
Eagle's Nest	13/16 15/16	15/16 1 1/16	1 0	—	1 0 0	2,500	Mt.Margrt	Finsbury House.
East Hauraki	1/6 2/6	1/6 2/6	5/	—	0 5 0	400,000	Haur'ki NZ	"
Explorers Synd. ...	par ¼ pm	1/16 3/16 pm	1 0	2/6 April 29 '96	1 0 0	9,000	W. Austral	Copthall House
Fingall R'fs, Extd	¼ ⅜	⅜ ¾	1 0	1/4 Jan. 16 '96	1 0 0	150,000	"	4, Sun Court
Florence ......G	⅜ ⅞	13/16 15/16	1 0	—	1 0 0	60,000	"	18, St. Swithin's ln
Gibraltar Cons......	⅞ 1	⅞ 1	1 0	—	1 0 0	300,000	N S Wales	6, Queen-street-place
Gladiator ......G	11/16 13/16	11/16 13/16		—	1 0 0	—	W. Austral	43, Threadneedle st
Glenrock ......G	/9 1/3	/6 1/	10/-	—	0 8 6	450,000	N. Zealand	3-5, Queen-st, E.C.
Golden Cement G	⅜ ⅝	⅜ ⅝	1 0	—	1 0 0	175,000	W. Austral	3, Princes Street, EC
" Crown...G	1¼ 1½	1⅜ 1⅝	1 0	—	1 0 0	100,000	"	54, Old Broad Street
" Gate......G	/9 1/3	/9 1/3	10/	—	0 10 0	150,000	Queensland	34-36, Gresham-st.
" Horse Shoe...	1⅛ 1⅜	1 3/16 1 7/16	1 0	—	1 0 0	—	W. Austral	13. Helen's Place
" Link ......G	11/16 13/16	¾ ⅞	1 0	5/- Oct 30 '95	1 0 0	90,000	"	9-10, King Street, E.C
" Plum......G	⅛ ⅜	⅜ ⅝	1 0	—	1 0 0	120,000	"	4, Bishopsgate Street
Gold Estates......	1 9/16 1 11/16	1⅝ 1⅞	1 0	3/ June 12 '96	1 0 0	80,000	"	20, Bishopsgte-st Wn
Great Boulder ...G	6 3/16 6 5/16 xd	6⅜ 6⅝	1 0	5/ Nov. 12, 96	1 0 0	240,000	Yilgarn ...	3, Gracechurch st.
" " Junction	15/16 1 1/16	1 1/16 1 3/16	—	—	—	—	"	Worc. Ho., Walbrook
" " M'n R'fs	1 1⅛	1 1⅛	10/	—	0 10 0	240,000	—	3, Princes Street.
" Fingall Rfs.	¼ ⅜	¼ ⅜	1 0	5% Jan. 16, 96	1 0 0	175,000	Kurnalpi	Broad Street House.
Gresham Synd. ...	¼ dis par	¼ dis par	1 0	4/ &bo.Jn12 '96	1 0 0	50,000	W. Austral	13-14, Abchurch ln
Hainault	⅜ ⅞	1¼	—	—	—	—	"	82, Gordon st., Glas.
HamptonGoldFlds	⅜ ⅞	⅜ ⅜	1 0	—	0 10 0	—	—	9, S. Mildred's Ct.
" GoldHill	1/ 1/6	1/3 1/9	1 0	—		—	—	93-94, Gracechurch st
" Plains...	3 3/16 3 5/16	3⅜ 3⅝	1 0	rts May 14 '96	1 0 0	300,000	Cool. W.A.	29, S. Swithin's lane
" PlainsEx	6/ 7/	6/6 7/6	1 0	—	0 18 0	180,000		Suffolk House, E.C.
Hannan's BrwnHil	3 11/16 3 13/16	3 11/16 3 13/16	1 0	—	1 0 0	65,000	"	Broad Street House
" Devel'pm'nt	1 1⅛	1 1⅛	1 0	—	1 0 0	147,000	—	5, Moorgate-st.-bldgs
" Main Reef...	5/ 6/	5/ 6/	10/	—	0 10 0	—	Kalg.W.A.	18, St. Swithin's ln.
" North......	9/16 11/16	7/16 9/16	1 0	—	1 0 0	51,107	"	33, Cornhill.
" 100 Acre......	⅜ ⅞	⅝ ⅞	—	—	—	—	"	Dashwood House.
" Oroya......	1⅛ 1¼	1 3/16 1 5/16	1 0	—	1 0 0	—	"	20, Bucklersbury
" Prop.	1 3/16 1 5/16	1¼ 1⅜	1 0	—	0 10 0	—	—	139, Cannon Street.
" Reward... G	1⅜ 1⅝	1 7/16 1 9/16	1 0	—	1 0 0	70,000	Hann. WA	Bartholomew Ho.
" Star......	1 5/16 1 7/16	1 5/16 1 7/16	1 0	—	1 0 0	—	E.Coolgde.	Finsbury HouseE.C
Hauraki......... G	15/6 16/6	15/9 16/3	2/6	1/ Sept. 30 '96	0 2 6	320,000	Coromndl.	Dashwood Ho.; E.C
Herbert Gold	¾ 1	¾ 1	1 0	—	1 0 0	85,000	Cool., W.A.	35, Lombard street.
Hit or Miss	1 1/16 1 3/16	1 1/16 1 3/16	1 0	—	1 0 0	120,000	"	1, Queen Vict. St.
Idaho ....GS	3/9 4/3	3/9 4/3	5/	-/6 Jan. 16 '96	0 4 8	143,439	W. Austral	Copthall House.
Kabonga ....G	1/6 1/9	1/6 1/9	10/	—	0 9 9	249,250	Queensland	70-71, Bishopsgate st
Kalgurli...........	¾ 1	¾ 1	1 0	—	1 0 0	34,000	W. Austral	20, Threadneedle-st
Kapanga.........G	10/6 11/6	10/ 11/	1 0	rts May 24 '95	0 19 6	249,760	N.Zealand	9, New Broad-street
Kathleen	2/9 3/3	2/6 3/	2/6	—	0 2 6	600,000	Ha'raki, NZ	Dashwood House
" Crown......	1/6 2/	1/6 2/	2/6	—	0 2 6	564,258	"	" "
Kintore ....G	⅜ ⅜ dis	⅛ ⅜ dis	1 0	—	0 15 0	44,000	W. Austral	13, Abchurch lane.
Komata Queen......	2/3 2/9	2/3 2/9	2/6	—	0 2 6	600,000	Ha'raki, NZ	Dashwood House,
" Reefs	8/6 9/6	8/6 9/6	5/-	—	0 5 0	200,000	"	"
Kurnalpi Caledo'an	⅛ dis ⅛ pm	⅛ dis ⅛ pm	1 0	—	1 0 0	150,000	"	20, G. Winchester St
Kurnalpi......... G	3/ 4/	3/ 4/	1 0	—	—	—	Coolgardie	Throgmorton House
Lady Loch...........	1 7/16 1 9/16	1 7/16 1 9/16	1 0	—	1 0 0	70,000	"	34-35, Gresham-st.
" Shenton	1⅞ 2	1⅞ 2	1 0	—	1 0 0	—	—	18, St. Swithin's ln
Limerick	¾ 1	¾ 1	1 0	—	1 0 0	52,537	Coolgardie	Leadenhall Buildgs.
Ln. & Con. Invest.	⅛ dis par	1/16 dis 1/16 pm	1 0	—	0 5 0	500,000	W. Austral	79, Queen Street.
Lon. & Globe Fin.	4 4⅛	4⅛ 4¼	1 0	rts Mar. 27 '96	1 0 0	150,000	"	15, Austin Friars.
Londonderry......G	2/ 3/	2/ 3/	1 0	—	1 0 0	467,000	"	1, Gt. Winchester-st.
L. & W. Aust. Expl.	15/16 1 1/16	15/16 1 1/16	1 0	4/-Nov 29 '94	1 0 0	270,100	"	Broad Street Ho.
Lon. W. A. Invest.	1⅛ 1⅜	1⅛ 1⅜	1 0	1/ Aug 13 '95	1 0 0	100,000	"	"
Mainland Cons. G	2 2⅛	1 15/16 2 1/16	1 0	—	1 0 0	150,000	Murchison	64 Old Broad Street
Mawson'sReward. G	⅞ 1	⅞ 1	1 0	—	1 0 0	60,000	"	28 & 29, S.Swithin's ln
Menzies Gold Est.	9/16 11/16	7/16 9/16	1 0	—	1 0 0	—	"	Broad Street House
" Gold Reef	⅝ ⅞	¾ ⅞	1 0	1/ June 28, '96	1 0 0	175,000	"	22a, Old Broad Street
" (O'Driscoll)	9/16 11/16	9/16 11/16	1 0	—	1 0 0	—	"	16, Tokenhouse Yard
Mills' Day DawnG	11/16 13/16	11/16 13/16	1 0	-/6 Aug 29 '95	0 15 6	300,000	Queensland	16, S. Helen's Place
Moonan ....G	2/ 3/	2/ 3/	1 0	—	0 19 0	185,000	N.S. Wales	Bishopsgate House
Mount Lyell.........	8 8¼	7⅜ 7⅞	3 0	rts June 26, '96	3 0 0	300,000	Tasmania	Finsbury House
Mount Margaret...	1⅜ 1½	1⅜ 1⅝	1 0	—	1 0 0	—	W. Austral	28, St. Swithin's ln.
" Morgan G	3⅜ 3½ xd	3⅜ 3⅝	1 0	-/6 Nov. 12, '96	0 17 6	1,000,000	Queensland	9, Gracechurch-st.
" Rowe	⅝ ¾	⅝ ¾	1 0	—	1 0 0	75,000	Coolgardie	44, Coleman Street
MurchisonN.Ch'm	5/6 6/	5/6 6/	1 0	1/- Oct 30 '95	1 0 0	160,000	"	23, College Hill.
N'e Hauraki Props	2/6 3/	2/6 3/	5/	—	0 5 0	320,000	Ha'raki, NZ	Dashwood House.
" Queen ......G	7/ 8/	7/ 8/	1 0	-/6 Sep 12 '95	0 19 6	158,915	Queensland	71-72, King Wm. St.
" Z. Jubilee	⅛ ⅜	⅛ ⅜	1 0	—	1 0 0	100,000	UTh'm'sNZ	20, Gt. Win. St.
Norseman	1 1⅛	1⅛ 1¼	1 0	—	1 0 0	200,000	Dundas ...	30, S. Swithin's lane
North Boulder......	11/16 13/16	11/16 13/16	10/-	rts July 15, '96	0 10 0	—	W. Austral	18, Helen's Place
" Coolgardie ...	/6 1/	/6 1/	5/	—	0 4 0	400,000	Pilbarra ...	226, Winchester Ho.
" Kalgurli	⅜ ⅝	⅜ ⅝	1 0	—	1 0 0	—	—	11, Abchurch lane
Omnium G M Assoc	—	¾ ⅞	1 0	—	1 0 0	80,000	—	Broad-street House
Paddington Cons.	1 1⅛	1 1/16 1 3/16	1 0	—	1 0 0	75,000	W. Feather	77, Bishopsgate-st.
Pambula	⅞ 1	⅞ 1	1 0	—	—	100,000	N. S. Wales	45-46, Broad St. Av'e
Pilbarra G. F.	⅜ ⅝	⅜ ⅝	1 0	2/ May 14, '96	1 0 0	100,000	Pilb, W. A.	38, Coleman-street.
Process Pt. Prop.	3/ 3/6	3/ 3/6	5/	—	0 4 6	400,000	Coro. N.Z.	Dashwood House
Rosage Syndicate	⅞ 1	1⅛ 1¼	1 0	£2 & rts F.13 96	1 0 0	50,000	W. Austral	4, Bishopsgate-st.
Royal Oak...........	2/ 2/6	2/ 2/6	5/-	—	0 5 0	400,000	Ha'raki, NZ	Dashwood House.
" Sovereign ...	1 1⅛	1 1⅛	1 0	—	1 0 0	60,000	Coolgardie	8, Old Jewry, E.C.
Sherlaws	8/6 9/6	9/6 10/6	1 0	—	1 0 0	25,000	"	Broad Street Avenue
Scottish Australian	¼ ⅜	¼ ⅜	1 0	-/3 Aug., '96	1 10 0	200,000	N. S. Wales	Winchester Ho. E.C
Scotty's Hauraki...	2/6 3/	2/6 3/	5/0	—	0 5 0	330,000	Ha'raki, NZ	63, New Broad-stree.
Southern Star	1/3 1/9	1/3 1/9	2/6	—	0 2 6	600,000	Coro. N.Z.	63-4, New Broad-st.
South Kalgurli ...	⅜ ⅞	⅞ 1	1 0	—	1 0 0	60,000	W. Austral	29, Great Win. St.
Stray Shot & Excl	⅜ ¾	⅜ ⅝	2/6	—	1 10 0	—	Pilb., W A	30, S. Swithin's lane
Success	2/3 2/9	2/3 2/9	2/6	—	0 2 6	400,000	Coro. N. Z	Dashwood House,
Taitapu G. Estate	2 9/16 2 11/16	2⅝ 2⅞	1 0	—	1 0 0	125,200	Nelson, NZ	9, S. Mildred's Court
Tararu Creek	7/ 8/	7/6 8/6	10/	—	0 8 0	160,000	Ha'raki, NZ	Dashwood House,
Thames Hauraki...	13/16 15/16	1 1⅛	1 0	—	1 0 0	200,000	"	54, Old Broad Street,
Tokatea of Hauraki	2/ 2/6	2/ 2/6	5/-	—	0 5 0	530,000	"	63, New Broad St.
Town Prop. of W A	⅞ 1	⅞ 1⅛	1 0	—	1 0 0	250,000	W. Austral	28-9, S. Swithin's-ln
Triumph	3/ 4/	3/- 4/-	5/	—	0 5 0	400,000	Ha'raki, NZ	Finsbury House.
True Blue	⅜ ⅝	5/16 7/16	1 0	—	1 0 0	—	"	Dashwood House.
Union Waihi	par ¼ pm	par ¼ pm	1 0	—	0 10 0	141,250	Tham's, NZ	11, Abchurch Lane
Victor Waihou ...	3/6 4/6	3/6 4/6	10/	—	0 10 0	340,000	K'rghk'NZ	63, New Broad St.
Victory (C.T.)...G	6/6 8/6	6/ 8/	5/	—	0 3 10	40,000	Queensl'nd	32, Gresham-st. E.C.

AUSTRALIAN AND NEW ZEALAND MINES—(Continued).

Name.	Closing Price, Nov. 13, 1896	Closing Price. Nov 6, 1896.	Am't. of Share	When last XD and Dividend	Called up Per Share.	Amount of Stock or No. of Shares Issued.	Situation of Mine.	Head Office
Waihi............. G	6¾ 7	6⅜ 6⅝	1/	rts Oct 15,'96	1 0 0	181,000	Th'ams NZ	11, Abchurch-ln. E.C
" G. Junction...	1 1/16 1 3/16	1 1/16 1 3/16	1 0	—	1 0 0	110,000	U ThmsNZ	12, Finsbury Circus
" Silverton	¾ 1	1¼ 1⅜	1 0	—	1 0 0	60,000	Oh'n'miNZ	23, College Hill
Waitekauri	4⅛ 4⅜xd	4⅜ 4⅝	1 0	1/ Nov 12, '96	1 0 0	136,000	WKauriNZ	11, Abchurch Lane
" Central	7/ 8/	6/6 7/6	10/-	—	0 7 6	130,000	"	63, New Broad St.
" Cross	1 1/16 1 3/16	1 1/16 1 3/16	1 0	—	1 0 0	120,000	"	19a, Coleman Street
" Extended ...	6/9 7/3	7/ 8/	10/	—	0 10 0	130,000	Ha'raki, NZ	63, New Broad St.
" United	⅜ ⅝ pm	¼ ½pm	1 0	—	1 0 0	50,000	"	Finsbury House.
Waratah............ G	12/ 13/	12/ 13/	10/	—	0 10 0	100,000	Crydn, N Z	43, Threadneedle st
Water Trust Min.	⅜ ⅝	⅜ ⅝	1 0	—	1 0 0	120,000	W. Austral	Broad Street House
W. of Nations......	⅞ 1	15/16 1 1/16	1 0	—	0 15 0	—	—	77, Bishopsgate-st.
Wentworth . . . G	9/16 11/16	9/16 11/16	1 0	1/- Apl 15 '96	1 0 0	500,000	N. S Wales	4-8, Throgmort. Av.
W. A. Develop's.	⅜ 1	⅝ ⅞	1 0	rts May 14 '96	1 0 0	50,000	—	49-53, Moorgate court
W. Aust.G.Conces.	¾ 1	¾ 1	1 0	2/6 Sept 16 '96	1 0 0	£55,000	W. Austral	33, Old Broad st., EC
W. A. Ex. & Fin.	4 4⅛	4 1/16 4 3/16	1 0	rts Mar. 27 '96	1 0 0	200,000	"	54, "
W-Australian G.F.	5¾ 6	5¾ 6	1 0	6/- July 30 '96	1 0 0	65,000	Coolgardie	28-29, S. Swithin s.ln
" " Mines Dvl	1 1⅛pm	1 1⅛ pm	1 0	10/ Oct 30, 95	0 15 0	40,000	W. Austral	3, Princes Street
" Aust. Mining	6/ 7/	6/6 7/6	5/	7½d.Mar.27 '96	0 5 0	320,000	"	257, Winchester Ho.
" Aust. Pioneer.	1⅛ 1⅜pm	1⅛ 1⅜pm	1 0	10/ June 12 96	0 15 0	19,993	"	139, Cannon-street.
" " Share Corp.	5/16 7/16pm	⅜ ½ pm	1 0	—	0 10 0	200,000	"	28, St. Swithin's ln
" " Venture......	⅜ 1⅛ pxd	⅜ 1⅛ pm	1 0	.5/ Nov. 12 '96	0 15 0	—	"	2, Princes Street.
West Boulder	7/16 9/16	7/16 9/16	—	—	—	—	—	
White Feather ...	1⅞ 2	1⅞ 2	1 0	—	1 0 0	60,000	Coolgardie	28 & 29, S. Swithin's ln
Woodstock	2⅜ 2⅝	2 5/16 2 9/16	1 0	—	1 0 0	137,500	KrnghkNZ	6, Drapers Gardens.
Zeehan Montana S	par	par	1 0	-/8 Oct. 15, 96	1 0 0	66,000	Tasmania	11, Queen Victoria st
" " ...	—	—	1 0	-/6 Oct. 15, 96	0 12 6	12,000	"	"

EUROPEAN MINES.

Name	Closing Price, Nov. 13, 1896	Closing Price, Nov. 6, 1896	Am't. of Share	When last XD and Dividend	Called up per Share	Amount of Stock or No. of Shares Issued	Situation of Mine	Head Office
Alamillos L	1⅛ 1⅜	1⅛ 1⅜	£ 2 0	2/- Sept 16 '96	2 0 0	35,000	Spain	6, Queen-street-place
Consett Ore	7⅛ 7⅜	7⅛ 7⅜	1 0	5/- July 94	1 0 0	55,200	Spain	19, Grey-st, N'castle.
Fortuna L	1 1¼	1 1¼	2 0	1/3 Sept 18 '96	2 0 0	25,000	Spain	"
Libiola..............C	1⅞ 2⅛	1⅞ 2⅛	5 0	2/-Sept. 30 '96	5 0 0	60,400	Italy	Dashwood Ho., E.C.
Linares L	5⅜ 6⅛	5⅜ 6	3 0	10/ Sept 15 '96	3 0 0	14,998	Spain	6, Queen-street-place.
Mason & Barry...C	3 3¼	2⅞ 3⅛	5 0	2/ May 23 '94	5 0 0	185,172	Portugal	87, Cannon-street.
Pestarena ....G	5/ 6/	5/ 6/	3 0	—	3 0 0	67,809	Italy	6-7, Queen-street-pl.
Pontgibaud ......SL	—	—	20 0	11/8 Dec. '96	20 0 0	14,000	Coueron...	"
Rio Tinto C	25 25¼	24⅝ 24⅞ xd	10 0	18/-Oct. 29, '96	10 0 0	325,000	Spain	30, St. Swithin's-lane
" (1st Mrt. Bds)	101 103	101 103	100 0	4% Oct. 1, 96	100 0 0	£3600,000	"	"
Ripanji ....SQ	—	—	1 0	—	0 19 0	95,000	Servia......	120, Bishopsgt-st, Wn
Tharsis.........C Sul	5⅞ 6⅛	5¾ 6	2 0	7/- Apr 29 '96	2 0 0	625,000	Spain	Glasgow.
West Prus Pre.pref	—	—	10 0	3% June 30 '96	10 0 0	1,500	Germany	Walbrook Ho., E.C.
" Prussian Pre.	—	—	10 0	8% June 30 '96	10 0 0	5,450	"	"
" Prussian Or.	—	—	1 0	4% Dec. 31, '95	10 0 0	14,050	"	"
Wohlfahrt L	—	—	1 0	3% Dec. '94	1 0 0	99,634	Prussia ...	17, Victoria-st., S.W
"	—	—	1 0	3% Dec. '94	0 10 0	9,090		"

NORTH AMERICAN MINES.

Name	Closing Price, Nov. 13, 1896	Closing Price, Nov. 6, 1896	Am't. of Share	When last XD and Dividend	Called up per Share	Amount of Stock or No. of Shares Issued	Situation of Mine	Head Office
Alaska Mexican...G	1⅜ 1⅝	1⅜ 1⅝ xd	$5	4 4-5d Oc. 29 96	$5	173,500	Alaska......	30, St. Swithin's-ln.
" Treadwell G	4⅞ 5⅛	4⅞ 5⅛ xd	$25	1/6 Oct. 29, '96	$25	200,000	"	" "
Anaconda C	6 1/16 6 5/16	6⅛ 6⅜ xd	$25	62½c My 2 '96	$25	1,200,000	Montana...	" "
Arizona (Pref.) Cu	55/ 55/6	55/ 55/6	4 0	1/6 July15,'96	4 0 0	158,920	Arizona ...	74, Geo.-st., Edinbor
" 6½ A Deben.	107⅛ 108xd	109 110	100 0	6½% Nov.12 '96	100 0 0	£135,300	"	"
" 7% B Deben.	98½xd	100	100 0	7% Nov. 12 '96	100 0 0	£181,300	"	
De Lamar.........GS	11/ 12/xd	12/ 13/	1 0	1/- Nov. 12 '96	1 0 0	400,000	Idaho	6, Drapers-gardens.
Doric...............G	5/6 6/6	6/ 7/	5/	—	0 5 0	125,000	Colorado...	Broad Street House.
Gen. M'g. Assoc. ...	5⅛ 6	5⅜ 6	5 10	12/-May 14 '96	5 10 0	27,469	C. Breton	Blomfield House.
Golden Feather G	⅛ ¼	3/16 5/16	1	—	1 0 0	180,000	California	St. Stephens Cs E.C
" Gate ......G	3/6 4/6	3/6 4/6	1	—	0 19 6	79,600	"	
" Leaf...... G	/9 1/3	-/9 1/3	1 0	—	1 0 0	300,259	Montana	8, Draper's Gardens
Hall Mines	1 9/16 1 11/16	1⅝ 1¾	1 0	—	1 0 0	250,000	Brit. Col.	1, Leadenhall St., EC
Harquahala...... G	/6 1/6	/6 1/6	1 0	-/6Nov.14,'94	1 0 0	300,000	Arizona ..	6, Draper's Gardens.
Holcomb Valley G	/3 /9	/3 /3	5/	—	0 5 0	540,000	California	14, Cornhill, E.C.
La Yesca ....GS	—	-/9 1/3	1 0	—	1 0 0	200,000	Mexico ...	20, Bucklersbury, EC
Montana......... GS	2/6 3/6	2/6 3/6	1 0	-/3 June 26 '96	0 19 0	657,158	Montana	Gresham House, E.C
Palmarejo ......GS	1/3 1/9	1/3 1/9	1 0	—	1 0 0	418,888	Mexico ...	32, Old Jewry, E.C.
PinosAltos(Dl)GS	—	—	1 0	-/6 Mar.' 90	1 0 0	100,000	"	110, Cannon-street.
Richmond ...GSL	⅝ ⅞	⅝ ⅞	5 0	1/- Dec. 16 '95	5 0 0	54,000	Nevada ...	44, Coleman street.
Sierra Buttes ...G	⅛ ⅜	⅛ ⅜	2 0	-/3 Apr. 29 '96	2 0 0	122,500	California	138, Leadenhall-st.
" Plumas Eur. G	¼ ⅛	¼ ⅛ xd	2 0	-/6 Oct. 29 '96	2 0 0	140,265	"	"
Springdale.........G	/3 /9	-/3 -/9	$1	-/2 Sep. 28, 9	$1	1,000,000	Colorado	20, Abchurch Lane
Twin Lake Placers	⅞ 1	1⅛ 1⅜	1 0	3/- Feb. '95	1 0 0	6,000		5, Lawrence P. Hl, E

SOUTH AND CENTRAL AMERICAN MINES.

Name	Closing Price, Nov. 13, 1896	Closing Price, Nov. 6, 1896	Am't. of Share	When last XD and Dividend	Called up per Share	Amount of Stock or No. of Shares Issued	Situation of Mine	Head Office
Anglo-Chilian PtN	8⅛ 8⅜	8⅛ 8⅜	10 0	7/0 Feb. 27 96	10 0 0	35,000	Antofagst.	123, Bishops.-st W
" 4½ Bylst MB	88 91	88 91 xd	100 0	4½% Nov 3 '96	100 0 0	£410,500	"	
Argen.Concessions	—	/1⅜ /4⅛	2/	—	0 2 0	150,000	S. Luis ...	3 & 5, Queen Street.
Caylloma............S	⅞ 1	13/16 15/16	2 0	1/- Apr. 94	2 0 0	125,000	Peru	52. Leadenhall stree
Colorado Nit. ...N	⅜ 1⅛	⅝ 1	5 0	2/6Dec.16,'95	5 0 0	32,000	Chili	12, King-st., Liverp'l
Colombian Hy...G	5/16 7/16	5/16 7/16	1 0	1/- Jy 26, '95	1 0 0	75,000	Colombia	10, Blomfield-street
Copiapo C	2⅜ 2⅝	2⅛ 2⅜	2 0	2/ May 29, '96	2 0 0	100,000	Chili	DashwoodHouse, E.C
Darien "A" ......G	5⅛ 5⅜	5⅛ 6	1 0	—	1 0 0	49,553	Colombia	Manchester.
" "B"	6⅛ 7	7 7⅛	1 0	x.nwApr 29 '96	1 0 0	30,000	"	"
El Callao ....G	⅛ ⅜	⅛ ⅜	5 0	9½d. Feb. '94	5 0 0	257,600	Venezuela	8, Bishopsgt.-st, Wn
Frontino & B....G	1¼ 1⅛	1⅜ 1⅝	1 0	9d. Oct. 15 9	1 0 0	128,662	Colombia	184, Gresham House
Glenrock ....G	/6 1/	/6 1/	1 0	—	1 0 0	198,948	Arg. (& I.)	3-5, Queen-street, E.C
Guadalupe ......GS	3/6 5/	—	1 0	—	1 0 0	120,000	Honduras	1a, Union ct. Old Brd
Java'l ....G	—	—	2/-	—	0 2 0	105,289	Nicaragua	139, Cannon-street.
Lagunas ....N	2⅜ 2⅝	1⅞ 2⅛	5 0	15p.c.Dec.'94	5 0 0	120,000	Tarapaca	3, Gracechurch st.
Lautaro ....N	5¾ 6¼	5⅛ 6	5 0	5/- June 26 '96	5 0 0	110,000	Chili	70, "
Liverpool ....N	7⅜ 8⅛	7⅜ 8⅛	5 0	15/- May 14, 96	5 0 0	22,000	"	Liverpool.
London Nit........N	2 2⅛	2 2⅛	3 0	3/4½ Nov. '89	5 0 0	10,000	"	9, Gracechurch-st.
" Nit.(Pref.)	3⅛ 4	3⅛ 4	5 0	3% Nov. 28 '95	5 0 0	22,000	"	"
New Julia......... N	—	—	—	—	—	—	—	
" Tamarugal N	1/16 3/16	1/16 3/16	1 10	1s. Dec. '94	1 10 0	130,000	Tarapaca	50, Lime-street, E.C
" 8% Cum Pref	5/16 7/16	5/16 7/16	1 10	8 p.c. Feb. '95	1 10 0	130,000	"	"
" 8 p.c. Debs ...	78 82	78 82	100 0	6 p.c. Feb. '96	100 0 0	£260,000	"	"
Nueva Esperanza	/6 1/	/6 1/	5/	—	0 5 0	160,000	Colombia	5, Copthall Bu'ld'ngs
Orita.......... ....G	—	/3 /9	1 0	1/- April '89	1 0 0	30,000	Colombia	10, Blomfield-street
Ouro Preto ....G	—	—	1 0	1/- Feb. '96	1 0 0	100,000	Brazil	6, Queen-street-place
Pac. & Jaspampa N	11/16 13/16	11/16 13/16	5 0	4/- May, '95	5 0 0	72,000	Tarapaca	3, Gracechurch-st.
Phœnix	9/ 1/3	-/9 1/3	10/-	—	0 8 0	400,000	S. Luis ...	3 & 5, Queen Street.
Rosario ....N	4⅛ 5⅛	4⅜ 5⅛	5 0	3/- Aug.13 '96	5 0 0	120,000	Chili	7⅛ OldBroad-street
" (5% Deb.)	102 105	102 105	100 0	5% Oct. 1 '96	100 0 0	£475,000	"	
" Hu'r'Db Scrp	103 106	103 106	100 0	5% July 1 '96	100 0 0	£200,000	"	"
St.John del Rey G	⅜ ⅞	⅜ ⅞	1 0	x.rtsNov 13 '95	1 0 0	327,650	Brazil	Finsby.Ho., Blmf'd st.
San Donato ... ..N	⅜ 1⅛	⅜ 1⅛	5 0	2/6 May 24 '95	5 0 0	32,000	Chili	12, King-st., Liverp l
" Jorge ....N	5 5⅛	4⅜ 5⅛	5 0	5/ Oct. 15 '96	5 0 0	75,000	"	9, Gracechurch-st
" Pablo ....N	1⅛ 1⅜	1⅛ 1⅜	5 0	5/-Oct. 30 '95	5 0 0	32,000	"	
" Sebastian ...N	⅞ 1⅛	⅞ 1⅛	5 0	2/ July 15 '96	5 0 0	29,000	"	Dashwood House E.C
Santa Barbara ...G	⅛ 5/16	⅛ ⅜	10/	1/3 Dec. '88	0 10 0	60,000	Brazil	Liverpool
" Elena ....N	⅛ ⅜	⅛ ⅜	5 0	5/-Nov. 15 '94	5 0 0	22,000	Tarapaca	3, Gracechurch-st.
" Rita ....N	3⅛ 4	3¼ 3⅞	5 0	10/May 29 '96	5 0 0	29,000	Chili	DashwoodHouse, E.
Tolima "A" ......S	5⅛ 5⅜	5⅛ 5⅜	5 0	5/-Mar. 12 '96	5 0 0	14,000	"	18, Finsbury-circus
" "B" ....S	3⅜ 4⅛	3⅜ 4⅛	0	5/- Mar 12 '96	5 0 0	6,000	"	"

PROVINCIAL SHARE MARKETS.

THE CORNISH MINE SHARE MARKET.

Mr. MICHAEL WILLIAMS BAWDEN, Mining and Assaying Offices, Liskeard, Cornwall, writes November 12:—Market firm and showing more confidence in the future of tin, with an inquiry for most shares at the present low prices, in view of a prospective advance: Quotations:—Basset United (Limited), 17s. 6d. to 18s. 6d.; ditto (5s. paid), 4s. 6d. to 5s.; Blue Hills, 4s. to 5s.; Carn Brea (Limited), 2s. to 2s. 6d.; Devon Consols, 17s. 6d. to 18s. 6d.; Dolcoath (Limited), 17s. to 18s.; ditto (10s. paid), 7s. 6d. to 8s. 6d.; East Pool, 18s. 6d. to 20s.; Killifreth (Limited), 1s. 6d. to 2s.; Levant, 2¼ to 3; Polberro, 5s. to 6s.; South Crofty, 2s. to 2s. 6d.; West Kitty, 2⅜ to 2½; Wheal Grenville, 4¾ to 5; Wheal Kitty, 4s. to 5s.; Wheal Metal, 3s. 6d. to 4s.

Messrs. ABBOTT and WICKETT, Stock and Share Brokers and Mining Share Dealers, Redruth, write under date of November 12:—There has been a little more business this week, and a hopeful feeling is prevalent that before long there will be a higher price for tin. Dolcoaths are about 17s., West Kittys 2½, Grenville 5, but the market is a limited one, and it would be difficult to deal in any number of shares at these prices Quotations herewith:—Blue Hills, 1s. to 2s.; Basset Mines (fully paid), 17s. to 18s.; ditto (5s. paid), 4s. to 5s.; Dolcoath (fully paid), 16s. to 18s.; ditto (7s. 6d. paid), 4s. 6d. to 5s.; East Pool, ¾ to 1; Killifreth, ¼ to ⅜; Polberro, ¼ to ½; West Kitty, 2¼ to 2⅜; Wheal Grenville, 4¼ to 4⅜; Wheal Kitty, ⅜ to ½; Wheal Metal (3s. paid), 3s. 6d. to 4s.

MANCHESTER.

Messrs. JOSEPH R. and W. P. BAINES, Stock and Share Brokers, Queen's Chambers, 7, Market-street, write November 12 (noon):—Though top prices of the week have not been maintained in many cases, still, after some falling off during the last day or two, quotations show a long list of advances compared with figures of a week ago. This is true throughout all departments of rails, though it is only in a few instances that these advances are very marked on balance. The home railway market provides the best instances of improvement, the set back in these cases being very small compared with that in some of their fellows, Americans and Canadians, whilst retaining advances without contradiction, are not now especially better except for a few specialities. In Mexican railway issues the improvements are expressed in fractions. Consols have a good rise for the week to be recorded—viz. ⅛—notwithstanding some fairly wide fluctuations at times. Colonial stocks quote better where altered. Home Corporation stocks, &c., irregular in movements of ¼ or 1 on either side. In foreigners, European issues, where altered, quote better, whilst some of the South American issues show depreciated values. In the several miscellaneous classes better prices are in majority in the recorded changes. This is distinctly so in all cases, except Insurance, which are irregular, with slight balance on the side against holders. In the purely miscellaneous sections alterations are contradictory and without special feature beyond decidedly better figures for Gas Light and Coke, and Imperial Continental Gas Stocks—the latter more particularly. Details of changed quotations hereunder:—

ENGLISH RAILS.—Higher: Caledonians, 2; Great Eastern, 1½; Yorkshire deferred, 1; Great Western, 1¾; Lancashire and Yorkshire, ¾ to 1; Brighton A, 2½; Chathams, 1; London and North Western, 1½; Sheffield A, 1½; Districts, ½; Midlands, 3; Berwicks, ½; Dover A, 1½.—Lower: Corns, ½.

CANADIANS AND AMERICANS.—Higher: Atchisons, ⅛ to ¼; ditto Preference, ¼; Canadian Pacifics, ¼ to ½; Trunk Ordinary, 5-16 to ⅜; ditto Guaranteed, ⅜; ditto First Preference, 1; ditto Second Preference, ¾; ditto Third Preference, ⅛; Mexican Rails, ⅜; ditto First Preference, ½; ditto Second Preference, ⅜; Central Pacific, 1⅜; Milwaukees, ⅛ to ¼; Denvers, 1; ditto Preference, 1; Louisvilles, 1⅛; Missouris, 1⅛; New York Centrals, ¼; Eries, ⅜ to ½; Ontarios, ½ to 1; Norfolk Preference, 1½; Readings, ⅜; Union Pacific, ⅜ to ½.

CONSOLS.—Higher: Two and Three-Quarter per Cent., ⅛.

COLONIAL STOCKS, &C.—Higher: Canada Registered 1938, 3; New South Wales Inscribed, 1½; Victoria Inscribed, 1; Victoria Three and a-Half per Cent., ⅛.

CORPORATION STOCKS AND DEBENTURES.—Higher: Blackburn Three per Cent., 1; Bury, Three and a-Half per Cent., 1.—Lower: Birmingham, Three per Cent., 1; Manchester Four per Cent., ⅛; Stockport, Three per Cent., ½.

FOREIGNERS.—Higher; Egyptian Unified, ½; Italian Rentes, ⅛; Mexican Six per Cent., 1; Portuguese Three per Cent., ⅛; Russian Four per Cent., ⅛; Spanish Four per Cent., 1; Turks, D, ⅛.—Lower; Argentine Six per Cent., ⅛; ditto Five per Cent., 1; Brazilian Four and a-Half per Cent., 1; ditto Four per Cent., 2; Uruguay Three and a-Half per Cent., ⅛ to ¼.

BANKS.—Higher: Ashton, &c., Bank, ½ to 1; Bank of Liverpool, ⅛; Imperial Ottoman, ⅜ to ½; District, ⅛ to ⅜; National Provincial, ⅛; Parrs, ⅛.—Lower: W. D. and Manchester and Salford Bank, ⅛.

INSURANCE.—Higher: British and Foreign Marine, ⅛; Thames and Mersey Marine, 1-16; Union Marine, 1-16.—Lower: Commercial Union, ⅜ to ½; Liverpool, London, and Globe, ⅛; Maratime, ⅛; Royal, ⅛.

COAL, IRON, &C.—Higher: Ashburys, ⅛; ditto New, ⅛; Bolckow Vaughan (£20 paid), ⅛; Bolckow Vaughan (£12 paid), ⅛; Parkgates, 1; Rhymneys, 3s.——Lower: Ebbw Vales, 1-16 to ⅛.

TELEGRAPHS AND TELEPHONES.—Higher: Anglo-American, 1; ditto Deferred, 1⅛; ditto Preferred, ⅛; Direct U.S. Cable, ⅛; West India and Panama, ⅛.

BREWERIES.—Higher: Bentley's, ⅛; Showell's Preference, ⅛; Springwell Preference, ⅛.

MISCELLANEOUS.—Higher: Bodega, ⅛; Bryant and May, ⅛; Eastmans, ⅜; Kellner Partingtons, 1-16; Spiers and Pond, ⅛; United Alkali, 1-16; Gas Light A, 5; Imperial Continental Gas, 13. Lower: Earle's, 1; Fowler Brothers, ⅛; Henrys, 3-16; Hetherington's, ⅜; Palaces, 6d.; Pacific Steam, ⅜; Ship Canal Ordinary, 1-16; ditto Preference, 1-16; Manchester Carriage A, ⅛; ditto B, ⅛.

LATER (4 P.M.)—A very dull tone prevailed throughout the market, and prices exhibited a drooping tendency all day, with the exception of Americans, which experienced a rally during the last hour on balance. Home rails are ⅛ to 1 per cent. lower; Americans, ⅛ to ⅜; and Canadians, ⅛ to ⅜. Mexicans hardly altered.

SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.

STIRLING.—Mr. J. GRANT MACLEAN, Stockbroker and Ironbroker (November 12), writes:—During the past week the market has been inactive, owing to the unsettled state of foreign politics. Prices of home securities were inclined to improve on good trade reports, and the satisfactory termination of the United States Presidential Election, but rumours of labour troubles have caused a reaction.

In shares of coal, iron, and steel companies there is not much alteration. William Cory and Son (Limited) Preference shares offered. Marbella unaltered. Cassel Coal are at 37s. 6d., Great Eastern Colliery 21s. 6d., Niddrie 41s., and Steel Company of Scotland 6⅛.

In shares of copper concerns, prices are better in sympathy with the market for the metal. Tinto touched 25⅜, on rumoured splitting of the £10 shares into 6 per cent. Preferred and Deferred shares of £5 each. Arizona are at 55s. 6d., Tharsis 118s. 6d. The repayment of £1 capital on Mason and Barry shares is expected next month.

In shares of gold and silver mines a fair amount of business has been done. The meeting of the Chartered Company cancelled the underwriting of the new shares, and allotments of these are now being issued to the shareholders at the rate of one new share at £20 for each five old shares held. The shares declined from 50s. 6d. to 42s. 6d., on statements that the Transvaal Government are asking an indemnity of £1,000,000 for the Jameson raid. The meeting of the Consolidated Gold Fields passed off satisfactorily, but the shares have declined from 9⅜ cum. div. to 8 1-16 ex div. Some disappointment was felt that Lord Salisbury's speech at the Guildhall made no reference to Transvaal political matters, which more than offset the possible effects of a satisfactory output for October, besides the reduction of wages and the abolition of the cyanide royalties, which now take effect. Randfontein and East Rand are also lower. Christmas Reef and Northern Wealth of Nations shares offered. Anglo African Gold Properties are at 13s. 6d.; African Recovery, 17s.; Almada, 1s.; Afrikander, 26s. 3d.; American Belle, 9d.; Balaghat, 1s.; Balkis, 4s. 6d.; Barrett's, 11s. 6d.; Bayley's No. 2 South, 8s.; Broken Hill, 47s. 9d.; Bantjes, 47s. 6d.; Big Blow, 5s.; Croydon Consols, 9s. 6d.; Chaffers, 3s. 6d.; Crœsus North No. 1, 18s. 9d.; Doornkop, 3s. 9d.; Emma, 1s.; East Sheba Reefs, 2s.; Forest King, 11s. 3d.; Florence, 16s. 3d.; Faith, 9s. 9d.; Ginsberg, 95s. 3d.; Golden Crown, 30s.; Glenrock, 1s.; Golden Arrow, 12s.; Golden Ridge, 21s. 3d.; Hauraki Associated, 3s. 6d.; Hall Mines, 33s. 9d.; Hannan's Main Reef, 6s.; Harquabala, 1s. 6d.; Hannan's Star, 21s. 3d.; Hainault, 18s. 6d.; Kapanga, 10s. 3d.; Kempinkote, 1s. 9d.; London and Continental Investment Founders', 5; London and Globe Finance Deferred, 6; Lake View South, 31s. 3d.; Mashonaland Central, 15s.; Mount Margaret, 5s. 9d.; Murchison Gold, 3s. 3d.; North Boulder, 15s. 6d.; North Croydon, 3s. 6d.; Oceana, 21s.; Porges, 18s. 9d.; Pearl Central, 22s. 6d.; Rothery Block, 5s.; South Luipaard's Vlei, 9d; St. John del Rey, 17s.; Sherlaw's, 9s. 6d.; Scottish Colonial Gold Fields, 10s.; South African Gold Trust, 6⅛; Sugar Loaf, 4s. 6d.; Thistle Reef, 1s. 3d.; Thames Hauraki, 20s.; Tokatea, 2s. 4½d.; Triumph Hauraki, 2s. 3d.; Violet, 18s. 6d.; Venture Syndicate, 26s. 3d. prem.; White Feather Reward, 38s. 6d.; White Feather Main Reefs, 6s. 3d.; and Waitekauri Central, 6s. 6d.

In shares of miscellaneous companies prices are generally better. In oil companies' shares prices are higher on the advance in price of sulphate of ammonia. The Dalmeny Company has announced a dividend of 20 per cent. Broxburn have advanced to 10⅛, Pumpherston 6⅞, and Young's, 33s. Roburite Explosives wanted. Field's Candle Six per Cent. Preference are at 11, Nobel's Dynamite 18, and Scottish Cyanide 5.

EDINBURGH.

Messrs. THOMAS MILLER and SONS, Stock and Share Brokers, 69, Hanover-street, Edinburgh, report as follows under date of November 12:—The railway market has been somewhat unsettled since the date of last week's report. On balance Caledonian Deferred has changed from 60⅛ to 59 13-16, North British from 48 to 47 11-16, Highland from 100⅜ to 99. Glasgow and South-Western from 133¼ to 137, Great North of Scotland from 114 to 115⅜. In insurance shares Commercial Union are 10s. lower, while Northern and Royal have advanced 17s. 6d. and 7s. 6d. respectively, Scottish Accident have improved from 47s. 6d. to 50s. Bank of Scotland has declined from 348 to 347½, Royal from 228 to 224, Union from 21 15-16 to 21⅛. Clydesdale shares have risen from 20½ to 20⅝. Steel Company of Scotland shares have fallen from 6 5-16 to 6., Rio Tinto from 25⅛ to 25. Broxburn Oil shares have risen from 9⅜ to 10⅛, Oakbank from 6⅛ to 6 11-16, Pumpherston from 6 to 6⅛, Young's Paraffin from 28s. 3d. to 33s. Distillers have gone down from 20⅜ to 19⅜, J. and P. Coats from 61 11-16 to 59 15-16, Nobel Dynamite Trust from 18 7-16 to 18 1-16.

THE IRON AND STEEL MARKETS.

Messrs. JOHN STEVENSON and COWPER'S weekly report, dated Middlesborough, and 5, Quayside, Newcastle-on-Tyne, November 12, state:—The pig iron market is firm and strong. The temporary set-back has been recovered, and to-day's closing prices are up to the best we have seen lately. There is a large amount of business being done, and although the trade is not progressing by such leaps and bounds as carry us off our feet, the upward movement is gaining ground, and great confidence is felt in the future. Shipments so far this month average nearly 5000 tons a day, and stocks are being reduced. No. 3 Cleveland is 40s. to 40s. 6d. for November and December, and higher prices are asked for next quarter and forward. Hematite is quoted 49s. for prompt and 50s. has been paid again for futures. Rolling mills are all very busy, and there is difficulty in securing early deliveries. Prices of both iron and steel are running with a loose rein. Common iron bars are £5, steel plates and angles are £5 10s. and £5 2s. 6d. respectively, and permanent way rails £4 10s. for contract quantities. Spanish ore quotations are kept up at much higher figures than present rates for pigs can afford, and to avoid buying, some of the furnaces are being turned on to Cleveland. Altogether the situation is perplexing to smelters of hematite. Coke is steady at recent rates, and the improvement in coal we reported last week seems firmly established. The Glasgow market closed this afternoon—"strong, good business"—Scotch, 48s. 7½d.; Cleveland, 40s. 6d.; Cumberland hematite, 50s. 7d.; Middlesbro' hematite, 48s. 6d. cash.

Messrs. BARRY, HEAD, and Co.'s weekly report, 26, Lombard-street, November 12, states:—Market continues strong and satisfactory in every way. A large trade is being done, though possibly the demand for shipbuilding material is not quite so pressing as last week. A generally improving tendency is apparent, and some descriptions of finished goods may be considered about 2s. 6d. per ton up on the week.

MINING IN CORNWALL AND DEVON:

NOTES ON MINING IN THE WEST.

(FROM OUR OWN CORRESPONDENT.)

THE only interesting feature in Cornish mining in the last week has been the speech which Mr. Strauss, M.P., delivered at Redruth on the subject with which his name is most intimately associated. His information on the production of tin is usually regarded as authoritative whatever individual opinions may be as to his predictions on the future of the market, and the facts which he was able to lay before his audience were of considerable interest. He speaks with great confidence of an improvement in the statistical position, and he bases his opinion on one or two of the most potent factors. In the first place he points out the marked increase in the consumption during the past year, and which, in his opinion, will still show expansion. But the more important factor is the probability of a further diminished production in consequence of the unremunerative nature of the present operations in the Straits. A strong evidence of this fact is afforded by the report of the Billiton Company, who have made a profit of only £20,000 on a return of 5000 tons, or of only £4 a ton. This profit has been obtained on an average of £8 a ton higher than the current price of to-day, so that they must now be losing £4 on every ton which is being raised. Mr. Strauss maintains that the equilibrium of consumption and production has been about reached, and that the tendency must in future be in an upward direction. Cornishmen have had a wonderful amount of patience, and certainly deserve a reward, which they are hoping will not now be long deferred.

THE Share Market has shown rather more vitality in the last 10 days, and there has been some inquiry for the shares in the concerns which are believed to be the most sound. The consequence of the inquiry has naturally been to enhance quotations without much business being done.

AT the annual meeting of the Royal Geological Society of Cornwall, at Penzance, on Tuesday, Mr. T. R. Polwhele, the President, made a suggestion, of which, it is to be hoped, more will be heard. The society has shown a tendency of recent years to become well-nigh as fossilised as some of the specimens in its own museum. The attendance at the annual meetings has not averaged more than 30, and a large proportion of those present are not geologists, and appear to be inexpressibly bored by the whole proceedings. Attempts have been made to increase the usefulness of the society by giving a series of free popular lectures under its auspices, but the result has been disappointing in the extreme, the attendance being even smaller than at the annual meetings. Mr. Polwhele now suggests that the society might be affiliated with the Mining and Science Schools at Camborne, and that the students of the latter institution might contribute to the cost of getting down a good geological lecturer, who would give a course of lectures with the specimens in the museum to demonstrate on such subjects as would be most useful to them. Mr. Polwhele has been in communication with Mr. Beringer, the Principal of the Camborne School, and hopes that some practical result will be arrived at.

AN error crept into our notes last week on the subject of the call at Dolcoath. It was stated that a call of 2s. 6d. had been made, and this would leave nothing more to call up. As a matter of fact, there is 10s. per share on 100,000 shares more to call up.

NEWS FROM WEST AUSTRALIA.

CUTTINGS FROM THE LOCAL PRESS.

(From the *Mining Journal* of Perth, October 10.)

THE clean up of the recent crushing of stone from the Queensland-Menzies has just been completed, and the result justified most sanguine expectations. The yield is declared to be slightly under 8 ounces per ton, which excludes the tailings and blanketing. It is expected that when these are treated the average yield will be over 10 ounces to the ton. The recent drop in the shares had no justification whatever. The scare first originated through the fact that the sodium amalgam deposited by the cooling of salt water in the passage over plates led to the loss of some of the gold. This, however, was easily rectified by repeated cleanings of the plates. The mine never looked better. The stone from the deepest level is literally studded with gold. Several reliable experts have just made an exhaustive examination of the property, and have declared, it is stated, that the mine is capable of paying dividends for years from stone already on the surface and in sight.

Mining is going ahead at Mount Jackson, and it is likely that a fillip will be given to the industry on the strength of a discovery recently made by Mr. Goston, of the Golden Lady Hay. That gentleman reports that an immense gold-bearing ironstone blow has been discovered. Dolly trials have given returns of 5½ ounces to the ton. Mr. Leslie, representing the Golden Pocket Gold Mining Company, has recently paid a visit to Mount Jackson, and is favourably impressed with the field. He has pegged out 48 acres adjoining the Golden Lady and George Lansell claims. Along the line of newly-discovered reef 160 acres have been pegged out, and Mr. Leslie speaks in a pronounced manner of the value he places upon their new discovery.

A shaft is being sunk near the south-west boundary of the Geraldton United lode, and at a depth of 27 feet 3 feet of solid stone, showing gold, has been struck, running parallel to the Golden Giant lode. There is a reef 1 foot wide adjoining, which is of kaolin formation, 5 feet wide. Excellent prospects have been obtained, both from the formation and the stone.

A fresh lode has been struck on Hannan's Oroya at the 200 feet level. It carries rich gold, but appears to be a blind reef, not rising above the 200 feet level.

The Hannan's Sir John Forrest Mine consists of 16 blocks, and is under the management of Mr. Woolcock. The main shaft has been sunk 200 feet, and the prospecting shaft is down 60 feet. From both the shafts, together with drives from them, payable ore is being taken.

(From the *Western Australian Gold Fields Courier*, October 2.)

Good progress has been made with the main shaft in the Great Coolgardie Proprietary Blocks. At a depth of 40 feet the lode widened to 5 feet, where, on the hanging wall, a leader came in about 4 inches wide, which, when tested by dolly and dish, returned about 5 per cent. of free mercury and ½ ounce of gold to the ton. On the South Block costeaning has been continued, and no less than four leaders were opened out, each carrying gold and mercury. One of these, in which both cinnabar and rich amalgamite were found, is being assayed, and it is estimated that it will give a fair return of gold and about 10 per cent. of mercury. A South African expert, who inspected the find, declared it to be a most valuable one. A vertical shaft has been started in the midst of these leaders, and Mr. Derrington, who visited the property with the divining rod, stated that this shaft is over a strong reef. He also pointed out several other spots where reefs are likely to be found.

A small sensation was caused by the exhibition, on the 24th instant, of some quartz just brought down from the Queen of the Earth Mine at Yerilla. The stone is in large blocks, one of which weighs fully 2 cwts, and is thickly impregnated with both coarse and fine gold. In places the gold stands out in large lumps. Finer specimens of auriferous quartz have not been seen in the town for many a day. The stone was taken from a depth of 15 feet. As is well known, the property belongs to the Cobar Syndicate. The original prospectors were Messrs. McGregor and Roxbrough.

After a month or two more of dead work at Bayley's Reward has been carried out the mine promises to be as rich as ever, and it is expected by the end of the year that dividends will be once more payable to the shareholders. Mr. T. Brown, the manager, is considered to be equal to any mining man on the fields for securing a successful issue.

The crosscut from the main shaft, Block 10s, on the White Feather Reward, has tapped a body of water making 3000 gallons per day. The main shaft on the Reward has also, at the 250 feet level, cut a new lode making 7000 gallons daily. The 20 stamps that will soon be at work will not at this rate need any extraneous supply of water.

A reef 6 feet wide was cut on Thursday in No. 2 shaft of the Aurelia lease, owned by the Menzies Gold Estate Company, at least 2 feet of which are of solid quartz. A bulk sample gave a return of 3 ounces 19 dwts. 21 grains to the ton. The reef is becoming better and more solid in depth. The point at which the reef was struck is 123 feet from the surface.

Warrants for six months' interim dividend in the preference shares of the BLUE SPUR AND GABRIEL'S GULLY CONSOLIDATED GOLD COMPANY at the rate of 8 per cent. per annum have been posted.

THE CYANIDE PROCESS.*

ZINC v. ELECTRICITY.

(*Continued from page* 1422.)

THE Electrical Process appears to be giving the best account of itself at the May Consolidated Works, the report for the year 1895 stating the average extraction as being 79 per cent. In the third annual report of the Rand Central Ore Reduction Company, the owners of the Siemens-Halske patent in South Africa, the average extraction over 12 months with the Worcester plant is given as 75 per cent. theoretical and 73·7 per cent. actual. The same report gives the extractions at the Metropolitan mine, where electrical precipitation was also then in use, as 73·6 per cent. theoretical and 69·3 per cent. actual, during a run of eight months. The value of the Worcester tailings average 6 dwts. 1·5 grains, and those of the Metropolitan, 4 dwts. 15·3 grains per ton. A controversy arose between the Rand Central Ore Reduction Company and the Metropolitan company on this question of extraction, and in the *Star* (Johannesburg) of January 1 of this year the figure was given as 55 per cent., the management of the mine, I understand, having reason to believe that this was the correct percentage, and not 69·3 per cent. Trials with zinc were instituted by the latter, and disclosed that extractions of over 70 per cent. were obtainable with it, a result which led to the substitution of three zinc boxes, each 18 feet by 3 feet, for the four Siemens-Halske boxes, each of which was of about 30 tons capacity.

Alongside these figures of the electrical process place the extractions achieved by plants having zinc precipitation. At the Meyer and Charlton the theoretical is about 75 per cent., the actual about 72 per cent., the Geldenhuis Deep theoretical in July was 75·9 per cent., the actual 72·5 per cent., and Mr. Williams at the Crown Reef has obtained 80 to 85 per cent., and at the Treasury is also obtaining extractions of over 80 per cent. From this it would appear that the highest extractions on the Rand are being obtained with the stronger solutions and zinc precipitation. The discrepancy between the theoretical and the actual extraction has been the centre of much debate. Only a fraction of this discrepancy represents actual loss. That portion of the discrepancy not actual loss is attributable to errors in the estimate or tonnage treated and errors in sampling and assaying, all of which are common to the two methods of precipitation, affecting them equally. Of actual losses, there is also one source in which the methods stand equal—viz., the loss of gold in solution by leakage.

Neither of the methods rising superior on these points, I pass on to the differentiating features of their discrepancies, which really begin with the operations connected with the recovery of the precipitated gold and its conversion into bullion. Here we are met with losses which make the amount of bullion produced less than is required by the theoretical extraction.

In the case of electricity we have loss due to the handling of the somewhat delicate strips of lead upon which the gold is deposited as a film. Then there is a slight loss incurred in the melting down of these strips, followed by a further loss during the cupellation. The Prussian blue formed in the boxes is found to be rich in gold, which constitutes another loss, although only a temporary one, the precious metal being recoverable.

No means exist of actually estimating the absolute total loss, but it is thought to be about ¼ per cent.

The clean up of the zinc process affords opportunities for loss in the cleaning of the zinc and the transferring of the slimes to the filter, and in the drying, roasting, and smelting of the slimes.

The gold in the slags, like that in the Prussian blue, can be recovered, the loss not being absolute. Here again we are unfortunately unable to guage the amount of loss, but it is generally accepted as being about 1 per cent. I have reason, however, to question the accuracy of this belief, and to submit that ½ per cent. would be a much more reasonable assumption. Owing to the quantity of the slimes, 1 per cent. of them constitutes a bulk by no means small, even in a plant of little capacity. In the Glencairn plant 1 per cent. loss in the clean up would mean the disappearance of 50 cubic inches of dried slimes per fortnight. Is such a loss as this at all probable? At the majority of mines where zinc is in use the appliances and arrangements for the clean up are of a most crude description, and the care and attention bestowed leaves much to be desired.

To judge the process by results obtained under such conditions would be unfair; the losses incurred would be due to no fault of the method. I feel assured that with reasonable care and proper arrangements and appliances the loss experienced with zinc is very little more than occurs with the Siemens-Halske process. Passing on, I now come to the nature of

The Superintendence Required

by each method and the labour involved in the clean up, a part of the comparision not devoid of interest to some of our cyanide managers and shiftmen. I would here premise that the process requiring the least labour is not necessarily the best for the mine. A method of precipitation relying upon such a delicate and uncertain agent as electricity must obviously require special skilled superintendence. If the cyanide manager in charge is not also an electrician, a special man must be available for attending to the short circuiting and other troubles to which this process is heir. The cutting up of the lead sheets is a tedious business owing to their great number, and is comparable with the turning of the zinc thread. If several sheets are cut superimposed, the strips cling together and have to be carefully separated, one by one, to expose the surfaces to the solution. This new form of cathode necessitates much more labour than the old sheet form. A clean up is made every six or eight weeks, when the frames carrying the lead strips are withdrawn from the solution, the lead removed, and new strips carefully substituted. The auriferous lead is subsequently melted and cast into blocks. Here the work of the clean up ends, so far as the plant at the mine is concerned, the lead being dispatched to a central works for cupellation. The iron anodes require replacing as they become useless from corrosion, and the Prussian blue has to undergo treatment for its gold.

The dependency of the Siemens-Halske plants on a customs works for the consummation of their clean up must be considered a great drawback to this process by our general managers; it is unsatisfactory to have a plant which is not complete. The owners of the Siemens-Halske patent furnish special men to run their process, but, nevertheless, the nature of the plant is such that on the score of superintendence alone it cannot be considered adapted for isolated mines.

Zinc needs little attention during the run. The turning of the zinc and placing it in the boxes are very simple matters, and any little irregularity in the working of the process is generally susceptible to easy remedy. A clean up is usually made every fortnight. Whilst this operation is more calculated to soil the hands than the partial clean up of the electrical process, its failings have, I consider, been greatly over-rated. With a well-arranged plant, proper appliances and intelligent work, much of the alleged labour and unpleasantness vanishes. The clearing of the boxes, the acid treatment, the filtering of the slimes, and the drying, roasting, and smelting require no very special skill. It has transpired that at the Metropolitan works it took as long to execute the incomplete clean up of the electrical process as it now does for the complete clean up with zinc. The automatic action of the zinc and the simplicity of the operations connected with it are weighty recommendations. That the zinc process should have so well stood the test of six years' work in the hands of men of many grades of ability and experience is eloquent testimony to its value and capabilities. One is tempted to ask whether electrical precipitation would come through a similar trial with such a successful record.

No comparison of the two processes would be complete which did not touch on the question of costs. The cheapest work is not always compatible with the best commercial results, but there is a fascination about low costs which is frequently apt to obscure true interests. It will be remembered that when electrical precipitation was introduced a great future was predicted for it, because of the economy in costs it was expected to effect. How do

The Costs of the Two Methods Stand?

Present performances are of far more importance than contentions regarding future possibilities, but as the latter are not without interest, I may say that, whilst an adherent of electrical precipitation is looking forward to see his costs descend to 2s. 3d. per ton, there is at least one worker with zinc who anticipates the possibility of working for 2s. per ton with it. Let us review the financial record of the two processes and their costs at the present day. In Mr. Von Gernet's paper of August, 1894, on the working of the Siemens-Halske process at the Worcester mine, the cost per ton is given as 3s., made up as follows:—

Worcester Cyanide Plant.

COSTS PER TON.

	s.	d.
Filling and discharging	0	10·00
Cyanide	0	6·00
Lime	0	1·20
Caustic soda	0	0·05
Lead	0	1·10
Iron	0	2·20
Native labour	0	5·20
Native wages and food	0	1·90
Coal	0	4·60
Stores and general charges	0	3·20
Cost per ton	3s.	0d.

The statistics in the annual report of the Rand Central Ore Reduction Company show that the costs of the Worcester plant during the 12 months ended June 30, 1895, averaged 3s. 6·9d. per ton, and those of the Metropolitan mine, where the Siemens-Halske process was then at work, are given as averaging 3s. 4·5d. per ton during a period of eight months. In the report of the May Consolidated mine for the year 1895 I find that the average cost of the process during the 12 months was 3s. 2·854d. per ton, including 3 per cent. royalty.

(*To be continued.*)

* Paper read before the Chemical and Metallurgical Society of South Africa by Mr. John Yates.

REPORTS FROM THE MINES.

BRITISH MINES.

DOLCOATH.—Report dated November 7:—New sump shaft, which is being sunk by two rock drills, is now 7 fathoms below the 440. The lode produces tinstuff of low quality. The 440 west of new sump shaft is worth £10 per fathom. The 440 east of new east is holed to No. 2 winze. The south part on which the end has been driven is worth £12 per fathom. We are now cutting north to ascertain the size and value of the lode before again driving east. No. 3 winze, 7 fathoms under the 425, is worth for 9 feet long and 6 feet wide £30 per fathom. Old sump shaft sinking under the 425 is worth £10 per fathom. The 425 west of old sump is worth £10 per fathom. The 412 west of old sump is worth £15 per fathom. About 60 fathoms west of old sump we are now rising by rock drill over the 375 fathom level, where the lode is worth for 9 feet long and 6 feet wide £25 per fathom. There is an extensive piece of ground to be developed in this part of the mine, as there is no level between the 375 and the 314. The ground below the 375 will be explored by driving the 412 and 425 west of old sump. The 375 east on the north lode near the eastern shaft is worth £20 per fathom. The 375 west is worth £30 per fathom. We have not yet intersected the lode in the 400 crosscut. The 327 west on the north lode is worth £10 per fathom. The same level west on the south lode is also worth £10 per fathom. We are driving a crosscut north at the 338 near Harriett's shaft for the purpose of intersecting the main lode, which we expect to do in a few weeks. The rise over the 294 east of Stray Park is holed to the 282. The 282 east of rise is worth £15 per fathom. The 294 east has been worth £20 per fathom for several fathoms driving. Williams' shaft is sunk 47 fathoms from surface. We shall next week begin to brick this shaft up to the adit level.—Josiah Thomas.

FOXDALE MINES (Isle of Man).—November 5:—Beckwith's engine shaft. The permanent pitwork has been completed to the 200 fathoms level. Double skip and ladder roads put in, ground for large and convenient trip lodge taken out, and this week we have commenced to drive the shaft crosscut south to intesect the main lode at this depth.—275 fathom level. A crosscut has been driven 8 fathoms immediately behind the west forebreast, cutting through the south part of the lode, which is composed of quarts, chalabite, and small branches of lead ore, but not sufficient of the latter to value, consequently, we have again resumed the driving of the level on what we are now satisfied to be the main part of the lode. The lode in the east end, although large and promising, only produces occasional blotches of lead ore. So far, nothing of of importance has been discovered in the crosscuts driving north from this level.—260 fathom level. Since communicating the winze sunk from the 246 fathom level, advantage has been taken of the improved ventilation to crosscut north near the west forebreast to prove the full width and extent of the lode, thus necessitating the the temporary suspension of the end, which, however, we expect to resume driving next week. Beyond the satisfaction of knowing that the level is being opened out on the most productive part of the lode, the crosscut, so far, has laid open but little, if anything, of commercial value. The lode in the end driving west on north lode is, as anticipated, showing signs of improvement, now producing some good stones of lead ore. No change has taken place in the East end. The lode, which continues large, is not producing sufficient ore to value.—245 fathom level. The men are now engaged putting up a rise near the west forebreast for ventilation and to open out the ground for stoping.—Bawden's engine shaft. Fair progress is being made in sinking this shaft below the 260 fathom levels.—Potts' shaft. There is no particular change to report in the various ends driving at, and above, the 200 fathom level east of this shaft.—W. H. Kitto.

LEADHILLS.—W. H. Paull, November 9.—Brown's vein. The two stopes over the 115 fathom level north of Jeffrey's shaft are worth together 55 cwts. of lead ore per fathom. Drift south of No. 1 stope over same level north is in a vein chiefly charged with spar, and producing good stones of lead ore. The 85 fathom level south of Wilson's shaft shows a vein over 4 feet wide, and nicely mixed with spar, and giving off a dampness, but without ore. The 50 fathom level, north of main rise, is going forward in a vein above 4 feet wide, mixed with encouraging spar, not, however, yielding any lead ore. The stope above this level north, and the o below, are valued at 25 cwts. and 30 cwts. of lead ore per fathom respectively. Gripp's adit south of Wilson's shaft continues much the same as last week, without ore. There is nothing new to report in connection with the several other underground bargains. All works, both in the mines and at surface, are being pushed on regularly. Cold, dry weather here these two days.

WEARDALE LEAD.—Report on Weardale Company's mines for the week ending November 7:—Groverake. We are putting in slide bunning and fixing sump top, making ready for sinking the old shaft.—Boltsburn. Little limestone drift east. We have cut a very quick string which has come in from the south side. Stopes in north flats from Watt's level worth 38, 38, 20, and 16 cwts. per fathom. Stopes in south flats worth 22, 30, 24, 16, 16, 12, and 14 cwts. per fathom. Vein stopes worth 14 and 12 cwts. per fathom.—Greenlaw's. Rises drift forehead in south part of vein still divided, north part nipped. The south part better to drive, poor for ore, worth 8 cwts. per fathom. Stopes worth 14, 18, and 18 cwts. per fathom. Lowe's drift, vein composed chiefly of spar, mixed with ore, end worth 10 cwts. per fathom. Stopes worth 10, 14, and 14 cwts. per fathom.—Sedling. Driving 64 level east, vein 4 feet wide of spar and rider, mixed with ore, worth 12 cwts. per fathom. Stope worth 14 cwts. per fathom.—Killhope. In Middlegrove vein east and west of English's rise the vein west is straight and poor. We have got up to the north cheek of the 4 fathom drive above the rise, and the vein is inclining to the south in plate. Vein at the east end is worth 40 cwts. per fathom. Work delayed by bad airs. Ore raised for the week 48 tons. Ore dressed for the week, 52 tons. Ore, slag, and fume smelted for the week 68 tons, producing 35 tons of pig lead.

ALAMILLOS.—Mine report dated November 4:—In the 40 fathom level driving east of Santa Agueda's shaft the lode is strong and open, valued at 1 ton per fathom. The lode in 70 east of Sanz' winze is wide, and continues very regular, estimated at 1 ton per fathom. In the 160 east of Taylor's engine shaft the lode, although large and well defined is of little actual value. Lode in same level west of Taylor's engine shaft is letting out a quantity of water, but is at present unproductive. The driving of the 85 east of Hermann's winze has been temporarily suspended, and the men have been put to sink a winze in order to ventilate and lay open the ground for stoping. The lode was valued at 3 tons per fathom. The sinking of Judd's shaft below the 100 fathom level has been continued during the month, and fair progress has been made. Galvez' winze below the 85 fathom level valued at 3 tons per fathom. This winze is situated east of Hermann's winze, and will be holed to Alvarez' rise. Cano's winze sinking below the 85 west of Taylor's engine shaft on the south lode is estimated at 1 ton per fathom. Alvarez' rise in back of 100 fathom level. The lode continues strong, but has declined to 2 tons per fathom. The stopes continue to yield well. Surface works are carried on with great regularity, and the machinery is in good working order. Estimated raisings for November 225 tons. The tributers' returns amounted to 56 tons of mineral in the past month.

EMERALD REWARD.—The manager reports under date Yalgoo, October 1, as follows, viz.: Consolidated ground, shaft No. 1. After my arrival at the mines I increased the depth of the vertical shaft here to 57 feet, with the result that I struck a 3 feet 6 inches reef, of which 1 foot 3 inches is very good stone indeed, while the balance carries gold as well. Unfortunately I was stopped by an influx of water that compelled me to shut down. It was with regret that I did so, but the keeping down of the water by hand would have been too expensive under present conditions to allow of a profit. However, the new main shaft will, I think, when at a depth drain, this, and development will be recommenced.—Shaft No. 2. I was informed on my arrival at the mine that there was a large reef here carrying fair gold, but as the shaft was then full of water, and has remained so, I have been unable to inspect the reef personally. My hopes as to the draining of No. 1 shaft are, of course, applicable to the one as well.—Shafts Nos. 3, 4, 5, 6. These are merely small shafts which were sunk before the company took over the property, apparently for prospecting purposes, but as they struck nothing have been abandoned.—Reward claim, shaft No. 1. There is a small reef of very good stone here, yielding, I would say, 3 ounces to the ton. It was worked for some time, but as elsewhere the water has in the meantime prevented development. This shaft also will, I think, be drained ultimately by the main shaft.—Shaft No. 2. This is merely a small shaft which had been sunk between the quarries, but striking nothing of importance had been abandoned when I arrived.—Shaft No. 3. There is a large quantity of stone here which can be raised at any time, but I have not been working it, as until the battery is going constantly, and the stone from this shaft can be treated with that from others the grade is not high enough to make treatment profitable. Then, however, it would repay working.—Shaft No. 4. This is off the line of reef altogether and has accordingly been abandoned.—Shaft No. 5. There is very good stone in this shaft, though somewhat difficult to follow as it periodically splits into leaders. This, of course, means that it cannot be worked on a large scale, and I have accordingly suspended operations here until the main shaft and the battery are going.—No. 6 (Quarry). This was a large blow, as were also the other quarries on the plan, but having been completely worked out they can be ignored.—Shaft No. 7. This shaft struck a few leaders which were followed up, but at their indications were that the shaft was off the main line of reef I did not develop it, the leaders being of themselves not large enough to be profitable.—New main shaft. On my arrival at the mine, after inspection of the above points, I saw that the only proper method of development was to sink a main shaft on the line of main reef indicated by the convergence of the leaders. After careful examination of the ground I accordingly selected the point shown on the plan at new main shaft, this being as nearly as I could judge the point to which the leaders further up converge. The shaft, which is 10 by 5 feet, has been sunk to 54 feet and efficiently timbered to the bottom. Unfortunately, the water, which was struck at 30 feet, steadily increased until the influx became so great that it could not kept under by hand, and sinking was accordingly stopped at the depth mentioned. When the pump is going, however, the water will be practically nothing. The shaft is in an easy formation of a slaty nature, which requires a little timbering. I do not expect to cut the reef at less than 300 feet, but I intend to drive for the reef at 100 feet or at 120 feet, and have every hope of striking something good.—Winding and pumping plant. Plan No. 2 enclosed shows the arrangement of this, and will I think obviate the necessity for an explanation in writing. The poppet legs are being put together, and will be up in a few days. The erection of the machinery is being pushed on as fast as possible. In fact, the whole of the labour at the mine is concentrated on the erection, with the exception of the hands on the poppet legs, and one preparing the ground for sluicing, which is dealt with further on. The body of the engine is now up, and the foundations for the winding and pumping machinery practically ready. Unfortunately the dilatoriness of the Government in executing their contract for some necessary repairs to the boiler may delay me with it, but Messrs. Burns, Philp and Co. are putting pressure on them, and if it be not commenced in a few days the work will be done elsewhere at their expense. The mason is commencing the boiler setting next week.—Crushing and amalgamating plant. This has been thoroughly overhauled since my arrival at the mine, and is now in a condition for starting at practically any time.—Tailings. I would estimate the quantity of these at about 2500 tons. On the 28th ult. I received from the manager of the Day Dawn Mine a report on the treatment of samples by the Sulman-Bromo cyanide process. This, after examination, I sent to Mr. Campbell, who will, I presume, forward it to you. It shows that the working of the tailings would result in a profit, and in that is confirmed by all the previous assays and tests. I have no doubt whatever that the erection of a good plant would repay the company handsomely.—Surfacing. On part of the Consolidated Ground and of the East Emerald lease there is a large quantity of loose surfacings in heaps, prospects from which show sufficient gold to pay well for sluicing, which I will accordingly commence as soon as the pump is going and the water from the main shaft is available. I expect a return of from 60 to 100 ounces gold.—East Emerald lease. This is under exemption until the 11th inst., having been so from May 11. The ground has never been thoroughly prospected, nor has any development been carried on, but its position may make it a valuable addition to the Consolidated and Reward claims! These, I think, comprise all the details I can put before you, and from them you will see that there are several points in the mine well worth developing. On the whole I think the property is quite the best in the Yalgoo district, but its thorough development can only be effected on the lines indicated in dealing with the main shaft. Payable quantities of stone can be obtained only by striking a main reef, and all the indications of the leaders point to one in the position selected for the main shaft. Not only is that so, but as you will have noticed several of the smaller but payable shafts have been stopped in consequence of the quantity of water. A main shaft by draining these when it reaches a depth will enable operations to be recommenced in these as well.—Shamrock lease. This lies over the hill, and is quite distinct from the rest of the property. It has also been under exemption since July 31, which expires on the 31st inst. All the shafts were filled up before my arrival with the exception of two, one of these being a water shaft and the other on a reef about 1 foot 6 inches large. The ground has never been properly developed, the shaft having apparently been sunk at random. This renders it difficult to judge of the possibilities of the lease, but there is gold in it, though I could not make a positive estimate of the quantity.

PIGG'S PEAK DEVELOPMENT (Swaziland).—Report for the month ending September 30: Pigg's Peak Mine. Quarry A, west end. Width of lode 60 feet, assay value 6 dwts. 12 grains.—Quarry A, east end. Width of lode 23 feet, assay value 10 dwts. 4 grains.—Quarry B, west end. Width of lode 22 feet, assay value 2 dwts. 9 grains.—Quarry B, east end. Width of lode 19 feet, assay value 9 dwts. 13 grains.—No. 1 level east. No. 1 A drive has been driven east from No. 1 A shaft 44 feet, total length 102 feet. This drive continues on the lode on Gilbert's winze chute. Assay value of drive 12 dwts.—No. 1 level east. No. 2 crosscut south driven 19 feet, total length 51 feet. Assay value of crosscut 6 dwts. 3 grains.—No. 1 level west. No. 1 crosscut driven 12 feet, total length 60 feet. Assay value 5 dwts. 4 grains. This crosscut still continues in payable gold, proving the lode to be an enormous width at this point.—No. 1 level west. No. 3. A drive driven 13 feet. Assay 7 dwts. 8 grains. This drive is on the lode and will intersect No. 1 crosscut and will further prospect the lode west.—No. 1. level west. No. 2 crosscut driven 11 feet. This is a new crosscut from surface that will cut the lode 170 further west than No. 1 crosscut.—Summary. Average fire assay of the foregoing 7 dwts. 10 grains. Total footage driven 99 feet, 652 tons were mined and dumped, making the total quantity of ore at grass 6552 tons. Construction work has proceeded satisfactorily during the month. All details in connection with the electrical transmission plant are practically completed, and we have had some satisfactory preliminary trials. With the exception of minor details in connection with the mill the construction work is completed. Electric lighting plant has been laid down, lighting mill, offices, houses, &c. Also the main adit level has been lighted throughout.—E. C. Dicey (mine manager).

INDIAN.

MYSORE WEST AND MYSORE WYNAAD CONSOLIDATED.—Half monthly report to October 15:—South shaft has been sunk to a depth of 557 feet 6 inches, progress 6 feet. 507 north on west lode has been driven to 255 feet, progress 19 feet. The lode in the end is 3 feet wide, worth 3 dwts. per ton. 507 north on east lode has been driven to 204 feet 6 inches, progress 9 feet. The end is in mixed ground, worth 3 dwts. per ton. 507 south on east lode rise has been carried up 14 feet. The lode here is 1 foot wide, worth 8 dwts. per ton.—450 north. The end has been cleared and we are putting in air pipes in order to resume work at this point. Walker's shaft has been sunk to 133 feet 9 inches, progress 7 feet 3 inches. Since the beginning of the month there has been a slight improvement in the value of the mill ore, but this has been effected by knocking off the poorest stopes.

CHAMPION REEF.—Fortnightly report of Captain James Rowe, superintendent, dated October 19: Dalyell's shaft. This shaft has been sunk 6 feet 6 inches, total depth below the 945 feet level 53 feet 3 inches. Lode 3 feet wide, assaying 1 ounce 2 dwts. 30 grains of gold per ton.—Garland's shaft. This shaft has been sunk 2 feet 3 inches, total depth 1076 feet 9 inches. Lode small, being 6 inches wide, assaying 1 ounce 4 dwts. 14 grains of gold per ton. The lode is influenced by a small crossing, and we hope soon to get an improvement in size and value. The 1040 feet level north has been driven 16 feet 6 inches, total length 314 feet 6 inches. Lode has got smaller, being influenced by a hard bar of strata, is now 6 inches wide, assaying 1 ounce 12 dwts. 12 grains of gold per ton. No. 2 rise in back of level risen 7 feet, total height 25 feet 6 inches. Lode 1 foot wide, assaying 1 ounce 3 dwts. 6 grains of gold per ton. No. 1 rise risen 9 feet 3 inches, total height 70 feet 3 inches. Lode 1½ foot wide, assaying 1 ounce 15 dwts 8 grains of gold per ton. The 1040 feet level south has been driven 17 feet 9 inches, total length 172 feet. Lode 3 feet wide, assaying 1 ounce 1 dwt. 6 grains of gold per ton. No. 1 rise in back of level risen 14 feet 3 inches, total height 17 feet 9 inches. Lode 3½ feet wide, assaying 18 dwts 20 grains of gold per ton. The 940 feet level north has been driven 12 feet 3 inches, total length 589 feet 3 inches. Lode 8 feet wide, assaying 1 ounce 5 dwts. 15 grains of gold per ton. The 840 feet level north has been driven 10 feet 6 inches, total length 392 feet 3 inches. Lode 3½ feet wide, assaying 1 ounce 12 dwts. 15 grains of gold per ton. No. 6 rise above level risen 11 feet 9 inches, total height 14 feet 9 inches. Lode 4½ feet wide, assaying 1 ounce 14 dwts. 22 grains of gold per ton. No sinking has been done in the incline winze below level, as we have been engaged driving a little north of winze to prove where the back of the shoot is. The lode in this part is 4 feet wide, assaying 13 dwts. 16 grains of gold per ton. Level driving north from bottom of winze below 740 north has been driven 20 feet, total length 116 feet. Lode 1½ foot wide, assaying 1 ounce 21 grains of gold per ton.—Ribbiesdale's shaft. This shaft has been sunk 7 feet. Lode still small, and without value. The 740 feet level north has been driven 25 feet, total length 232 feet 9 inches. Lode 6 inches wide, assaying 13 dwts. 6 grains of gold per ton. The 740 feet level south has been driven 23 feet, total length 2 6 feet 6 inches. Lode 2 feet wide, assaying 1 ounce 2 dwts. 14 grains of gold per ton. The 640 feet level south of east crosscut has been driven 14 feet 9 inches total length 474 feet 3 inches. Lode 1 foot wide, assaying 19 dwts. 10 grains of gold per ton. No. 3 rise above level risen 4 feet 6 inches, total height 14 feet. Lode 1 foot wide, assaying 12 dwts. of gold per ton.—Carmichael's shaft. This shaft has been sunk 5 feet 6 inches total depth below the 640 feet level 95 feet. Lode small. No sample taken. The 640 feet level driving north from middle part of fold has been driven 24 feet 6 inches, total length 25 feet. Lode 3½ feet wide, assaying 1 ounce 8 dwts. 18 grains of gold per ton. The 540 feet level driving back south from 540 north on east part of lode has been driven 22 feet 6 inches, total length 95 feet 6 inches. Lode 4 feet wide, assaying 1 ounce 3 dwts. 6 grains of gold per ton. Rise above 440 north of crosscut east of shaft rise 12 feet, total height 31 feet 9 inches. Lode 3 feet wide, assaying 1 ounce 4 dwts. 14 grains of gold per ton.—Rowe's shaft. This shaft has been sunk 10 feet 6 inches, total depth below the 615 feet level 84 feet 8 inches. Lode 3 feet wide, assaying 1 ounce 13 dwts, 19 grains of gold per ton. The 615 feet level north of shaft has been driven 21 feet, total length 158 feet 6 inches. Lode 1 foot wide, assaying 10 dwts. 20 grains of gold per ton.—New vertical shaft. This shaft has been sunk 10 feet, total depth 278 feet 9 inches.—Stopes. These throughout the mine are yielding their usual quantities of quartz. The size and value of lode in each stope will be given in next report.

OOREGUM.—Superintendent's report for fortnight ending October 20:—Taylor's shaft sunk 12 feet, depth below the 1050 feet level 15 feet 6 inches. The reef shows no improvement, still very contracted. The surrounding strata is a compact schist. The 960 feet level south driven 28 feet, total 234 feet. Lode 2 feet 6 inches wide, assay value 3 ounces 5 dwts. 8 grains. No. 1 rise 960 feet level south commenced, risen 11 feet 6 inches. Lode small and of no value. This is intended to communicate with No. 1 winze 860 feet level south for ventilation. The 960 feet level north driven 12 feet 6 inches, total 122 feet 6 inches. Lode small and of no value. The 860 feet level south driven 25 feet, total 225 feet. Lode 3 inches wide. No sample. No. 3 winze 860 feet level south sunk 5 feet 6 inches, total 27 feet. Lode 1 foot 6 inches wide, assay value 1 ounce 13 dwts. 10 grains. No. 1 winze 860 feet level north sunk 6 feet, total 33 feet 6 inches. Lode 2 feet wide, assay value 6 dwts. 17 grains. No. 2 winze 860 feet level north sunk 13 feet, total 44 feet. Lode 6 inches wide, assay value 3 dwts. 6 grains.—Wallroth's shaft. The water is being drained, but not quite as fast as we expected. The extra speed of Taylor's engine to cope with water in that section has necessitated occasional stoppages for repairs to pitwork. During these stoppages the flow of water to Wallroth's shaft is materially increased. At 3 p.m. to-day the water was 75 feet below the 1060 feet level. The 1060 feet level south driven 7 feet, total 467 feet. The 1060 feet level north driven 1 foot 8 inches, total 333 feet 6 inches. No change in character or size of lode in either direction. The 960 feet level north driven 15 feet 3 inches, total 296 feet 6 inches. Lode 6 inches wide, assay value 5 dwts. 10 grains. The 760 feet level north driven 9 feet, total 548 feet 9 inches. Lode 4 inches wide, assay value 2 dwts. 4 grains. No. 3 winze 760 feet level north sunk 4 feet 3 inches, total 37 feet. Lode 3 feet wide, assay value 10 dwts. 21 grains. The 460 feet level north driven 13 feet 6 inches, total 459 feet 6 inches. Strata still intermixed with patches of quartz, but irregular. No sample taken. The No. 2 winze 460 feet level north sunk 3 feet, total 78 feet 6 inches. Lode 4 inches wide, assay value 2 dwts. 4 grains. No. 2 winze 260 feet level north sunk 3 feet, 3 inches, total 66 feet 6 inches. Lode 6 inches wide. No sample taken. The 215 feet level south driven 13 feet 6 inches. Total 529 feet 6 inches. Lode 9 inches wide, assay value 4 ounces 1 dwt. 15 grains. No. 1 winze level south from crosscut east 215 feet level north sunk 1 foot 6 inches, total 15 feet. Lode 6 inches wide, assay value 3 dwts. 6 grains. The 215 feet level north driven 11 feet, total 603 feet 6 inches from the shaft. Lode 6 inches wide, assay value 6 dwts, 12 grains. Low's shaft sunk 4 feet 6 inches, total depth 915 feet 4 inches. The 910 feet level south has been commenced and driven 17 feet. The 0 feet level south from point of intersection driven 16 feet 3 inches, total 335 feet 9 inches. Lode 6 inches wide, assay value 12 dwts. No. 1 winze 810 feet level south from point of intersection sunk 2 feet 3 inches, total 22 feet. Lode 1 foot wide, assay value 4 dwts. 8 grains—No. 2 winze, 810 feet level south from point of intersection sunk 2 feet 6 inches, total 15 feet 3 inches. Lode very small, no sample. The 810 feet level north from point of intersection has been continued on the branch referred to in last report and driven 13 feet, total distance 179 feet 6 inches. The branch is composed chiefly of schist intermixed with a little quartz and pyrites.—No. 1 winze, 810 feet level north from the point of intersection sunk 1 foot, total 21 feet 3 inches. Lode 1 foot 6 inches wide, assay value 8 dwts. 17 grains. The 710 feet level south driven 1 foot 9 inches, total 453 feet 3 inches. Lode unchanged. No. 2 winze 710 feet level south sunk 1 foot 9 inches, total 76 feet 3 inches. Lode 1 foot 6 inches wide, assay value 5 dwts. 10 grains. No. 3 winze 710 feet level south sunk 2 feet 3 inches, total 28 feet 9 inches. Lode 9 inches wide, assay value 6 dwts. 12 grains. No. 2 winze 510 feet level south sunk 3 feet, total 59 feet 3 inches. Lode small and of no value.—Probyn's shaft. 1050 feet level south driven 11 feet, total distance 288 feet 6 inches. Lode 1 foot wide, assay value 4 dwts. 8 grains. No. 1 winze 1050 feet level south sunk 3 feet 6 inches, total 71 feet. Lode 8 inches wide, assay value 5 dwts. 15 grains.—Exploratory work. Wallroth's shaft, Level south from crosscut 1050 feet level south driven 17 feet 9 inches, total 39 feet 5 inches. Branch of quartz 4 inches wide, assay value 7 dwts. 15 grains. Throughout the mine 72 stopes are being worked, all of which will be measured at end of month and full particulars given in next report.

ORIENTAL.—Mine report for fortnight ending October 17:—Taylor's engine shaft. During the past fortnight this shaft has been deepened 6 feet, making a total depth of 212 feet.—Bridge shaft. The total depth below the 165 feet level is now 13 feet, showing 7 feet sunk in two weeks. The 165 feet level south carries a lode of quartz averaging 3¼ feet in width, assaying 3 dwts. 22 grains of gold per ton. Here 12½ feet have been driven, making a total of 134½ feet. The 105 feet level south was extended 6 feet, making its total length 259 feet. The lode is split, carrying two veins of quartz intermixed with country rock. A sample from it yielded 2 dwts. 15 grains of gold per ton on assay.

KEMPINKOTE.—Superintendent's report for fortnight ending October 21: New shaft has been sunk 16 feet, total depth 130 feet. Timber has been carried down to within a few feet from the bottom of the shaft. There is a considerable amount of water to be contended with, but up to date we have been able to keep in fork with a barrel.—Surface. Good progress is being made with the masonry work of the bob-pit and the pumping engine loading. The former is nearly completed. The erection of the new building to act as fitting and blacksmiths' shops is progressing.

GOLD FIELDS OF MYSORE.—Mine report for fortnight ending October 21: South shaft has been sunk 7 feet 6 inches, total depth from surface 591 feet. Lode in the bottom 2 feet 6 inches wide, assaying 2 dwts. 15 grains of gold per ton. 570 feet south drive has been driven 73 feet, total distance from shaft 64 feet 6 inches. Lode in the end 3 feet wide, assaying 19 dwts. 14 grains of gold per ton. 570 feet north drive has been driven 9 feet 6 inches, total distance from shaft 64 feet. The lode in the end is rather small at present, being about 1 foot wide, assaying 3 dwts. 6 grains of gold per ton. 470 feet south drive has been driven 14 feet 6 inches, total distance from the shaft 262 feet 3 inches. The lode in this end is 1 foot wide, assaying 7 dwts. 4 grains of gold per ton. The winze in the bottom of the above level has been sunk 4 feet, total depth 23 feet. Lode in the bottom 3 feet wide, assaying 5 dwts. 6 grains of gold per ton. The 470 feet north drive in the crosscut west from the main level towards middle shaft we have started to drive north on the branch of quartz, and have driven 13 feet. Lode in the end 1 foot 6 inches wide, assaying 16 grains of gold per ton. 390 south drive has been driven 18 feet 6 inches, total distance from shaft 598 feet. Lode in the end 5 feet wide, assaying 3 dwts. 22 grains of gold per ton.—Middle shaft. After sinking 3 feet 6 inches this shaft was holed to the rise in the back of the 470 feet. Since then we have been stripping down the rise, and are making fair progress with it. This communication has greatly improved the ventilation of the mine.—Prospecting Ajjupuille block. The north drive at the bottom of this shaft, 126 feet from surface, has been driven 5 feet, total distance from shaft 24 feet. Lode in the end full size of the drive, assaying 18 grains of gold per ton. South drive has been driven 10 feet, total distance from shaft 31 feet. Lode in the end 2 feet 6 inches wide, assaying 1 dwt. 7 grains of gold per ton. Trial shaft has been sunk 5 feet, total depth from surface 96 feet. Lode in the bottom full size of shaft, assaying 16 grains of gold per ton.

COROMANDEL.—Superintendent's report for fortnight ending October 17:—Prospect shaft, 700 feet level south. This level has been driven a distance of 25 feet, making a total length of 51 feet 6 inches from the shaft. The quartz and the slide still continue to run side by side, the former, which is now 6 inches wide, and assays 1 ounce 13 dwts. of gold to the ton, constituting the hanging wall of the latter. The direction is nearly due south-east, and I have daily been expecting the slide to cut out the quartz in the level, but so far this has not yet taken place.—800 feet level north. This level has been driven 34 feet, making a total of 448 feet from the crosscut. This end is now in hard country rock, and we hope soon to communicate with the 600 feet level south of east shaft.—800 feet level south. The crosscut east of this level has been driven 16 feet, making a total of 543 feet. The rock has become extremely hard, otherwise there is no change to report.—East shaft. We have finished stripping down this shaft to the 500 feet level with the machine, and this has now been placed to rise in the back of the 320 level at 90 feet south of east shaft.—Coromandel shaft, 420 feet level north. This has been driven 23 feet, making a total length of 639 feet. The lode in the end is 14 inches wide, and assays 3 dwts. 4 grains of gold per ton.

AMERICAN.

CHIAPAS.—Mine report for the fortnight ending September 30:—Taylor deep adit driven 27 feet, total 350 feet, carrying pyrites, galena, and quartz. Assay 13 per cent. copper, Pine Creek drift No. 1 driven 20 feet, total 157 feet, striking occasionally a bunch of ore. San Antonio prospecting drift driven 6 feet, total 57 feet. Still producing ore. Santa Fé hill drift No. 3 driven 5 feet, total 239 feet. No change. Providencia crosscut east No. 1 driven 3 feet, total 435 feet. Struck a well defined ore body. After having driven 6 feet, are still in ore. I consider this an important discovery, proving the existence of ore in a locality considerably remote from other deposits, and without any apparent connection. We are apparently passing through the extreme northern end of it. Assay 1 dwt. 12 grains gold, silver 3 ounces 19 dwts. 12 grains, copper 1·33 per cent. Francisco winze sunk 6 feet, total 20 feet. Still continues in fair ore. Francisco adit drift south-east No. 2 driven 24 feet, total 84 feet. In barren ground assaying—gold traces, silver traces, copper 20 per cent.—Extraction. Old Providencia produced 211 tons of very good ore, assaying 1½ dwts. 12 grains gold, silver 12 ounces 11 dwts. copper 1·04 per cent. Santa Fé stopes sent 43 tons of fair ore to mill. San Juan stope extracted 458 tons fair ore, assay gold 7 dwts, silver 8 ounces 15 dwts., copper 2·14 per cent. Francisco adit stope and winze extracted 235 tons. Improved in quality. Assay—gold 4 dwts. 12 grains, silver 5 ounces 12 dwts. 12 grains, copper 2 67 per cent.

DUNDERBERG.—Manager reports October 26: I have received one of our 6 feet concentrators, which is now erected. I am expecting the second concentrator, motor, and grinsle to-day. The belts, amalgamating plates, and lore feeders are on the way. Our water wheel is in place and pips line connected, this has proved to be substantial with no leakage. I commenced hauling ore to the mill on the 23rd inst., and am delivering 36 tons per day at a cost of 30 cents per ton. The snow shed from the mouth of the tunnel to the site of the new ore bin is nearly completed. The timbers for the tramway are coming in fairly well, the sills are already in place. We can start the mill within five or six days after the arrival of the freight, now on the way. The raise from the south drift has been advanced 15 feet in fair grade ore since my last, total 60 feet above the tunnel level. The ledge at this point is 2½ feet wide, the ore is partially oxidised, showing both free gold and sulphurets. I will say that we have got a good 20 stamp mill, well equipped for running 10 stamps this winter economically. I also believe we have got a good mine, judging especially from the appearance, size, and value of the lead at the bottom of both the winzes below the tunnel level.

HARQUAHALA (Arizona).—Harquahala, Yuma County, Arizona, October 27: I beg to hand you herewith report of our operations for the month of September:—Cyanide department.—Table of work performed. Pulp treated 3637 tons, average assay of pulp $3·78 per ton, average assays of tailings $0·99 per cent., percentage extracted according to assays 66 per cent, bullion estimated to yield $7 43·96. The plant was operated 25 days.—Milling department.—Table of work performedfor lessees. Ore crushed 300 tons, average assay of ore $21·95 per ton, average assay of tailings $3·55, percentage extracted according to assays 80 per cent., bullion realised $4243·78. Ten stamps were operated 12 hours per day for 30 days.—Summary of revenue and expenses. Bullion realised from cyanide plant $7043·96, royalty on and milling lessees' ore $2356·75, miscellaneous $37·48,, total revenue $9458·19, operating expenses $4200·92, extraneous expenses $1:81, total expenses $5781·92—total $3676·27, profit at $4·90 equals £750.—Thomas D. Murphy, assistant manager.

LUCKY GUSS (Cripple Creek).—Manager reports October 28:—Things here are all right. I think the mine is looking better than it has for some time, and the vein we cut in the crosscut looks first-class. So far it has not been very rich, except a streak from 2 to 4 inches wide, which is very good. I made an assay yesterday from 3 feet of the vein, leaving out the rich streak, and it showed values $24 (1 ounce 8 dwts.) per 2000 lbs. It is all right, and as soon as I get some ground opened up can take ont lots of ore. I am still working the new shaft with windlass, and taken out good ore and a large quantity of low grade. I now have 60 or 70 tons of ore from the old workings at the samplers and 25 tons in the ore house. I also have 30 tons from the crosscut and about 30 tons from the new shaft in ore house. On November 1, I intend to start the lower crosscut for the vein I have above, and hope to cut it in 20 feet or less.

PESTARENA.—Report dated November 3: At the 33 fathom level work on No. 2 lode has been suspended, and two men put to explore on a branch to the right which carries a little ore. The 33 towards No. 1 ore shoot has not yet reached the shoot, but a little branch has been cut into which contains pyrites. The 45 on Pozzone lode now yields 4 tons per fathom at 2 ounces, the lode being 50 centimetres wide, of which 30 are well mineralised. A decided improvement has taken place in the 45 on No. 1 lade, the lode being 80 centimetres wide and yielding 7 tons per fathom at 2 ounces.—Crosscuts. The 46 south from Taylor's shaft has been resumed to explore the Pozzone set in that direction. The 55 towards Pozzone has intersected a cross head in the mountain but remains in schist. The 70 north is in solid schist. The 90 south has cut into a block of hard quartz, which somewhat retards progress.—Stopes. There are 9 stopes at work, yielding an average of 5 tons per fathom at 1 ounce 7 dwts. per ton—viz., at the 46 east on caunter 3 tons at 1 ounce. Two stopes at the 46 east on No. 1 lode yielding 3 tons at 1 ounce and 4 tons at 1 ounce 10 dwts. respectively. Two at the 55 east yield 5 tons at 1 ounce and 3 tons of 1 ounce. At 70 east there are three stopes yielding 8 tons at 2 ounces, 5 tons at 2 ounces, and 7 tons at 1 ounces 5 dwts., one stope at the 90 gives 7 tons of 1 ounce.—Stabioli. At the end north there is a well defined lode 2·30 metres wide. A small branch of pyrites exists on the hanging wall, while the lode itself is mixed throughout with small veins of quartz. The crosscut west from Morghen adit is constantly intersecting small branches of quartz.—Kint Concession. The end east on Oro Secco lode shows the lode to be 1 metre wide, mineralised throughout, having a small branch of pyrites on the footwall, and presents a promising appearance. In the rise towards Quarazza winze the lode is wide and hard, and at present carries no ore to value. In the winze the lode is 25 centimetres wide, and estimated to yield 4 tons of 1 ounce ore per fathom of winze. A crosscut for new entrance to the Kint Mine has been advanced 6·50 metres.—Val Toppa. In the Carboniera d'Alberto end east the lode is 1·20 metre wide, carrying metalione and galena of no present value. The end east from winze is in a well defined lode 60 centimetres wide, yielding 3½ tons per fathom at 8 dwts. 12 grains. An end has been started south from Carboniera d' Alberto to explore the lode in that direction. In the end south from winze the lode is now 70 centimetres wide, and occasionally a little galena is met with.—Machinery. This continues to work satisfactorily, and the water at Peschiera is now 16 staves below the 120 level. The Pozzone pump is stopped, owing to the inclement weather and the large amount of surface water to be contended with.—W. Henwood Trelease.

SANTA ANNA.—Extracts from a letter from Mr. E. R. George, dated October 18:—Mine. The work in the mine progresses very favourably, and with satisfactory results. Referring you to my No. 2 of the 13th ult., I there questioned whether the lode in No. 2 end revealed a new shute of ore, or otherwise, stating that we must await developments in the levels above or below. In No. 1 end just now we are in a splendid lode, of the same nature and appearance as the level above, with water issuing freely. I am glad to see this. Our No. 3 end is also looking much better of late, and I am inclined to think that an early improvement may be looked for here. The No. 4 end calls for no special comment, it is still in lode matter.—Machine. The stamping of the roughs continues without hindrance; latterly the produce per ton has been a little lower, yet a large margin of profit remains on the work.

MISCELLANEOUS.

CINDERELLA.—Report for September: No. 1 incline shaft advanced 39 feet, total depth 367 feet.—Assay value, September 1st, footwall section 12 inches wide, 3 50 dwts, September 15, footwall section 12 inches wide, 15·125 dwts. Reef not cut through in either case, as the shaft is being sunk in formation below the reef, West drift second level advanced 29 feet, total length 692 feet. No. 1 rise second level advanced 16 feet, total height 56 feet. No. 2 winze second level advanced 33 feet, total depth 80 feet. East drive third level advanced 27 feet, total length 162 feet. West drive third level advanced 37 feet, total length 400 feet. The reef was found to be faulted north here early in the month. This faulting has caused an overlap in the reef, but to what extent is not yet ascertainable. The drift has been driven in quartzite toward the faulted part of the reef. There are, therefore, no assay value of reef from here.—Construction. The excavations for the masonry foundations for engines and boilers at No. 1 incline shaft are completed. Templates for machinery set, and a portion of the masonry laid.

NEW BLUE SKY.—New incline shaft advanced 60 feet, total depth 301 feet. Sinking in slate formation off the reef.—North reef. East drive second level advanced 18½ feet, total length 67½ feet. West drive second level advanced 24½ feet, total length 95¼ feet.—Main reef. East drift second level advanced 33 feet, total length 35½ feet.—South reef. East drive second level advanced 41 feet. Total length on line of reef not increased, as this advance is on a crosscut on line of fault made to intersect reef, which is thrown north by a narrow dyke. There are, therefore, no assay values from this portion of the mine. West drift second level advanced 20 feet, total length 45 feet. North and south reef lines connected by a crosscut during the month, giving good ventilation and access to both. The four drill air-compressor plant is completed, which is now operating on north and main reefs. The drifts on the north reef were idle for about two weeks during the month, while air mains were being laid down for rock drills.

CRAVEN'S CALEDONIA.—The following fortnightly report has been received from the mine dated Charters Towers, September 24, 71-72, King William-street, November 16:—The crosscut going west has been extended a further distance of 12 feet on the east, making a total of 37 feet, and I am expecting to break through at any time. The reef in this crosscut averages from 6 to 9 inches in thickness. No. 7 level on the hanging wall reef has been extended a further distance of 7 feet, making a total of 146 feet from the starting point, and in this level the reef averages 7 inches in thickness. In the nine stopes over this level the reef averages from 6 to 10 inches in thickness. We have just put through a crushing of 126 tons for 126 ounces of smelted gold. At the syndicate mill the haulage of quartz for the company for this fortnight is 29 tons, 25 tons of which were carted to the mill, thus leaving a balance of 4 tons in the paddock. Hooper and party have put through a crushing at the New Queen mill of about 3 tons, and it will be cleaned up by Saturday. Francis and party over No. 6 level have put through a crushing of 12 tons for 13 ounces 11 dwts. of smelted gold. Sabadini and party at No. 5 level have put through a crushing of 14 tons for 13 ounces 1 dwt. 6 grains of smelted gold. Gribbon and party in the Victoria reef have cleaned up a crushing of 80 tons for a yield of 153 ounces 16 dwts. 19 grains of smelted gold.—(Signed) G. Cabassi.

NO. 7 NORTH-EAST QUEEN.—The following fortnightly report has been received from the mine dated Charters Towers, September 23:—I beg to report that Penhallurick and party have a fair reef in their stopes varying from 6 or 8 inches to over 2 feet in thickness. They intend crushing next week, and have about 70 tons on the surface now, which will be increased to about 100 tons before they are done crushing. Ferguson and party have no stone, and are rising for the hanging wall. Wherry and party have no stone, and party is now Andrews and party. They have 8 to 10 inches of stone up in the stope of good quality. The level is carrying no stone at present. Hauled about 44 tons 10 cwts. of quartz for the fortnight, and baled 764 tanks of water.—(Signed) John T. L. Williams.

ROBINSON DEEP.—I have to report progress for the month of September as follows:—Shaft No. 1 sunk 78 feet, making total depth of 1091 feet. Progress was slow on account of shortage of Kaffirs, and having more water in the shaft. While the increase of water has not been great it has been sufficient to retard the work to some extent. Several bastard reefs have been struck, these showing very small pebbles.—No 2 shaft. No sinking done during month, the work consisting of cutting station and starting crosscuts, of which we are driving three, one to the west to open up to open the main reef leader west of the shaft, the second to open up the leader east of the shaft, the third towards the point at which the underground haulage plant is to be located. The latter is to the north of the shaft. In a few days the crosscut to the south reef will be started, and later on work in sinking the incline will begin. In regard to the erection of quarters, foundations for hoisting and compressor plants, Mr. O. J. Taylor is pushing the work on married men's and single men's quarters, and compressor plants. Messrs. Prentice and Mackie have begun delivering stone and brick for the erection of the compound. Native labour has been scarce during the entire month, and we now need not less than 75 new boys. The shortage has been most noticeable at No. 2 shaft and on the surface. No boys have left since the beginning of the month, nor have given notice of their intention to leave, so that but little further trouble is anticipated on account of the reduction of wages. I am happy to state that we have been promised a supply of boys within the next two days. The delivery of the hoisting plant at No. 2 shaft is about complete, as is also the delivery of the compressor.—Pope Yeatman, General Manager.

ALBERT MINES SYNDICATE.—Reports from the property state that rich ore has been encountered in a drive at the 84 feet level, connecting two shafts on the Eclipse Mine at Kunanalling. As a consequence of the discovery, the shafts have been locked down and a large box of specimens forwarded to England. The Daddy Mine, at the 25 Mile, also belonging to this company, is on rich stone.

IVANHOE.—The following report has been received:—Main shaft. Cutting chambers at 110 feet level.—Water shaft 200 feet level south drive total 45 feet. Lode 5 feet wide, and same value last report.—No. 6 shaft. North and south stopes continued. Lode 18 feet wide, worth 3 ounces. No. 9 shaft, total depth 50 feet. Reef dipped to west. Shaft now in hard country rock.—Eastern lode. West crosscut in 4 feet, in low-grade ore material. This crosscut being continued to prove width of ore body, which is 28 feet wide on surface, and worth 14½ dwts. per ton. South drive, total 73 feet. Ore body full width of drive, 7 feet footwall not reached. Lode trends east of south, and carries payable gold. South winze down 32 feet. No change. Battery being run on stone from No. 6 shaft, south drive on east lode, and No. 2 winze. All machinery well on the way to mine. New battery should be started about 10 days after arrival of all the machinery.

LUBARES LEAD.—Mine report dated November 4: Poso Ancho Mine, Warne's crosscut. In the 200 fathom level driving east the lode contains some stones of ore. In the same level west we are driving on the course of the lode which is at present unproductive. The lode in the 178 west is very wide, letting out a quantity of water, and is valued at ¾ ton per fathom.—Peile's engine shaft. In the 200 west the lode produces good stones of lead ore, estimated at ½ ton per fathom. The lode in the 178 west is regular and well defined, and is valued at ¾ ton per fathom. No. 2 winze below the 178 fathom level has now holed to the 200 fathom level. The lode was valued at ½ ton per fathom. The stopes continue to yield well. Surface works are kept on very regularly, and the machinery is in good working order. Estimated raisings for November 200 tons. The tributers returned 74¾ tons of mineral in the past month.—Los Quinentos Mine. Taylor's engine shaft. In the 200 east the lode turns out some good stones of ore, valued at ½ ton per fathom. The lode in the 185 east is wide, and consists chiefly of carbonate of lime with some spots of lead ore. In the 185 east the lode is regular and well formed, but of little value at present. The lode in the 152 east is strong, regular, and compact, and is estimated at 1½ ton per fathom. Ricardo's winze sinking below the 165 fathom level is situated east of Taylor's engine shaft. The lode is valued at 2 tons per fathom. Estimated raisings for November 150 tons. The tributers returned 57½ tons of ore in the past month.

FORTUNA.—Mine report dated November 4:—Canada Incosa Mine, San Pedro's shaft. In the 125 fathom level driving west the ground at present is barren. In the same level east the lode is large, turning out good stones of ore, and is valued at ½ ton per fathom. The lode in the 110 west is regular and compact, and looks promising, estimated at ¾ ton per fathom. Olivo winze below the 110 east has been holed to the 125 fathom level. The lode was worth ½ ton per fathom.—Gomez's winze below the 110 west. The lode has become smaller and at present of no value.—Los Saltios Mine. In the 212 east of Taylor's shaft the lode is wide and open, containing some specimens of ore. The 60 east of north crosscut is opening up good stoping ground valued at 1½ tons per fathom. The lode in the same level west is small, but not sufficient to value. In the 92 west of Palgrave's shaft the lode is small and the ground very hard for driving.

ALMADA AND TIRITO.—Report for the fortnight ending September 15: Drivages. The end in Ibarras tunnel south has not changed. The lode is narrow and contains no ore. The end in the 157 feet level south of Taylor's shaft has decreased in value, and at present the lode is only slightly mineralised. Work in the 150 feet level south of Wilde's shaft has been suspended for the time being.—Shafts. Taylor's shaft sinking below the 150 feet level is mineralised 1 foot 6 inches, and should yield 3 tons to the fathom, assay value 6 ounces of silver per ton. Wilde's shaft, sinking below the 150 feet level is being sunk through a light red porphyry of a hard nature. The lode is massive, and at times shows spots of green ore.—Stopes. The stopes at Guadalupe are now yielding ore in paying quantities. The stopes in the old mine are steadily improving and good quantities of high grade ore are being taken out.—Report for the month ending September 28. Drivages. The end in Ibarras tunnel south is without change. The lode is still narrow and unproductive. 32·3 feet have been driven by three men, making the total to date 529 feet 4 inches. We have extended the 157 feet level south of Taylor's shaft a further distance of 25 feet 9 inches by three men, total length 224 feet 2 inches. There is a small branch of green ore lying against the floor or western wall which appears to be opening out. Shafts. Taylor's shaft sinking below the 150 feet level has been sunk a further depth of 5 feet 8 inches by five men. The lode is hard and difficult for working, but maintains its nominal value—viz., 3 tons of ore to the fathom and about 40 ounces silver per ton. Total depth to date 112 feet 3 inches. Wilde's shaft has been deepened 13 feet 1 inch, and has now attained a depth of 85 feet 6 inches below the 150 feet level. The lode has somewhat improved, and is now yielding a small quantity of green ore.—Stopes. The stopes at Guadalupe are now in good working order. Two stopes in back of the 150 feet level north of Taylor's shaft give an assay value of 31 ounces silver per ton, average width of lode is 4 feet. One stope in back of 150 feet level south of Taylor's shaft gives an assay of 23 ounces silver per ton, the lode at this point is 2 feet 6 inches wide. Two stopes are also being worked in the back of the 150 feet level north of Wilde's shaft, one contains black ore, which is at present of a low grade, but which will in all probability improve further north. The other stope contains green ore and gives an assay value of 44 ounces of silver per ton, the average width of this lode is 3 feet 6 inches. We have also one stope in the back of the Europas lode which gave an assay value whilst rising of 70 ounces silver per ton. The lode at this point is about 3 feet wide. There will be another stope commenced in the back of the 150 feet level south of Taylor's shaft next week. The stopes in the old mines have again improved, and judging from the general appearance of them, they will continue to do so for some time.—Report for the fortnight ending October 10: Drivages. The lode in Ibarras tunnel driving south is not encouraging, and is without ore. The lode in the 150 feet level south of Taylor's shaft contains quartz rather broken, but showing stains of green ore.—Shafts. The lode in the bottom of Taylor's sinking below the 150 feet level is fairly hard and is mineralised 2 feet. The last assay value was 61 ounces of silver per ton. The lode has a good appearance and will yield 4 tons of ore to the fathom. In the bottom of Wilde's shaft sinking below the 150 feet level the lode shows stains of green ore, and the indications are favourable.—Stopes. The stopes at Guadalupe are returning fairly good quantities of payable ore. Two stopes at the back of the 150 feet level south of Taylor's shaft are worth 2¼ tons of ore to the fathom and 34 ounces of silver per ton. Stope at the back of the 150 feet level South Europas is worth 1½ tons of ore to the fathom and 120 ounces of silver per ton. The two stopes at the back of the 159 feet level north of Wilde's shaft are yielding 3 tons of ore to the fathom and assaying 47 ounces of silver per ton. The stopes in the old mine continue to yield ore in paying quantities.

HAMPTON GOLD FIELDS.—The following is the latest information received from the manager, Mr. James M. Crase, M.E.:—Coolgardie, September 30. Block 53. Since writing you last I made two visits to this block, returning here from there on Wednesday last, too late to write by that mail. When leaving there I saw nothing to call for a special report. The men were getting some good gold-bearing stone from a drive 30 feet deep in the underlay shaft. From the bottom of vertical 70 feet a drive was being put in south on reef to connect with underlay. Length of level 15 feet, width of reef 3 feet, but up to that time we could not find any gold. Liking the appearance of the reef, I ordered the continuation of drive. On Friday our prospector major sent me in some samples, together with a letter saying they had struck very rich gold in this drive. These reached town on Saturday. On Monday I washed some of the samples, and cabled you as soon as possible after. The stone sent in is exceedingly good-looking, and the prospects I obtained from same were quite equal to 12 ounces of gold per ton. Very little has been done on the other reefs in this block since I wrote last, but each and all are gold-bearing, and would warrant a good report as earlier shows. Block 48, No. 1 block north level has been extended 5 feet 6 inches, total 15 feet 6 inches. I have instructed men to again cut through the reef towards footwall from both ends, to test width and value, after which work will be suspended until reported on, and probably until a company has been formed to work the same. This shaft has been timbered where necessary, ladders fixed to bottom, and opening sets put in each drive, so that it will be left in safe condition. No. 2 block has not been worked since I wrote.—No. 1 block. A shaft has been sunk 20 feet in the reef, width of which is as yet unknown, but it will probably be from 29 to 30 feet wide. Gold can be found by panning from surface to bottom of shaft, and I have every reason to hope it will develop into a highly payable ore.—No. 4 block. We have commenced to sink a vertical shaft to strike the reef at 40 or 50 feet. The reef being more hard and costly to sink through, my reason for sinking this shaft in the country. Shaft now 14 feet deep from brace. Surveyors are now surveying the blocks on 48 and 53, and are expected back to town at any hour. Plans will be made and forwarded to you as soon as ready.—October 7.—Block 53. I have just returned from another inspection of the block, and am very much pleased with the appearance of the reef, especially with the last 5 feet driven in the 70 feet level south, which face is 20 feet from the shaft. The reef is fully and well defined, the full width being worth 3 ounces to the ton.

AUSTRALIAN AND NEW ZEALAND.

BRITISH BROKEN HILL PROPRIETARY.—Mining manager's report for week ending October 1:—Blackwood shaft, 200 feet level, South drive off No. 1 west crosscut drives 12 feet, total length 16 feet, showing fair grade sulphides the whole way. The sulphide stope off No. 1 west crosscut yielded milling sulphides as required. 222 tons sulphide ore was mined, and from the southerly drive off west crosscut 50 tons sulphide ore was mined.—100 feet level. Two east vein and southern section stopes maintained their usual output of carbonate ore for milling requirements; the various faces are looking very well. 460 tons 7 cwts. carbonate ore was raised from the stope. From the stope above and below this level we obtained 73 tons 2 cwts. 2 qrs.—Howell shaft, 100 feet level. Splendid faces of lead ore are showing in far north stope, which yielded a large quantity of ore for the mill. This stope yielded 667 tons 11½ cwts.—200 feet level. Sulphide stopes have been started in the drive connecting No. 1 and 2 west crosscuts; massive faces of good milling ore showing everywhere. 314 tons 18 cwts. sulphide ore was mined. Have started sinking incline veins off No. 2 west crosscut for connection with the 300 feet level.—300 feet level. Large south drive off west crosscut now in 13 feet, carrying good sulphide ore. Sulphide stope off east crosscut yielded 189 tons 12 cwts. lead sulphides during the week. From the large southerly drive 73½ tons sulphide ore were broken. Total raised during the week 1206 tons carbonate ore, 263 tons sulphide ore, equals 2059 tons.—General. All the slime settling tanks have been finished, which completed all construction works. Mill has been running smoothly during the week.—Assays for the week. Carbonate—Lead from 19 to 72 per cent., silver from 2·1 to 15·1 ounces per ton. Sulphides—Lead from 3 to 71 per cent., silver from 5·3 to 15·1 ounces per ton, zinc from 10·2 to 19·1 per cent.

BENDIGO DISTRICT.—The secretary writes:—I beg to hand you herewith extracts from a letter dated September 29 from the local committee. In connection with this I beg to call your attention to the fifth and seventh paragraphs on page 3 of the Chairman's report of October 5 last, which are as follows:—In the meantime, after discussing matters very thoroughly with our manager and the local committee we decided to proceed with the development of the Staffordshire Flat property as this lease contained a dyke formation about 30 feet wide interlaced with quartz veins, and is very easy and cheap to work. According to other mines in the district 5 dwts. per ton covers cost of production, and the difference between what we are getting out and 5 dwts. per ton should be profit.—Extracts from the local committee's letter dated Melbourne September 29; I last had this pleasure on September 16, and have since received your letters, dated August 14 and 21, contents of which are noted. I mentioned in my last that Parker and Co.'s return of treatment by chlorination of 19 cwts 1 qr. 16 lbs. of quartz veins in the dyke in the Stafford Lease was equal to 1 ounce 1 dwt. 19 grains to the ton, and I duly forwarded the bottes of gold under registered parcel to your address. I have since received a return of treatment of quartz veins by Deeble and Co., of Bendigo, which is equivalent to 1 ounce 16 dwts. to the ton, but the most encouraging result is from the 5 tons taken from the Stafford lease and treated by the Steward's United Company at Bendigo by ordinary battery process, and which yielded 3 ounces 6 dwts., or equal to 13 dwts. to the ton. This, it must be borne in mind, was taken indiscriminately from the dyke, including quartz veins and reef formation and the ordinary dyke, in accordance with an arrangement made by Mr. McColl with the London Chairman, Mr. Campbell Johnston, when they were upon the mines.—Results of crushings. I was instructed at a special meeting to enable the results of the treatment of the three parcels of ore, which I did. I am also forwarding with this letter the original returns supplied to me.—Ingots of gold. Under instructions from the local committee I have handed to Mr. William MacMurtie, manager of the Land Mortgage Bank of Victoria (Limited), who is proceeding to London, the two ingots of gold representing retorted gold from Stewart's United Battery, and smelted gold from Deeble and Co., of Bendigo. I have given Mr. MacMurtie a formal letter of introduction to yourself.—Beautiful Venice lease. Good progress is being made with the sinking of the shaft, which is now down 213 feet, showing quartz leaders and slate.

BROKEN HILL PROPRIETARY BLOCK 10.—Mine manager's report for week ending September 23: Campbell's shaft, 615 feet level. Stopes here are producing ore assaying 21 ounces silver, 18 per cent. lead, and 30·5 per cent. zinc.—Kelly's shaft, 615 feet level. Stopes at this level producing milling ore assaying on an average 17 ounces silver, 20·5 per cent. lead, and 29·25 per cent. zinc.—515 feet level. Stopes at this point are producing ore assaying 19 ounces silver, 23 per cent. lead, and 29·25 per cent. zinc.—465 feet level. Stopes at this level yielding ore for shipment, assaying 26·5 ounces silver, 27 per cent. lead, and 29·5 per cent. zinc.—415 feet level. Stopes here also yielding ore for shipment. The assays for week average 31 ounces silver, 26 per cent. lead, and 27·5 per cent. zinc. Surface tunnel extended 16 feet for the week, making total distance from the mouth 601½ feet.—Concentration. Plant treated 1306·3 tons crude ore, assaying 21 ounces silver, 21 per cent. lead, and 28 per cent. zinc, producing 340 tons concentrates, assaying 32·5 ounces silver, 63·3 per cent. lead, and 9½ per cent. zinc. Ore despatches for the week 1342 tons 3 cwts. 1 qr. 9 lbs., containing roughly 459 tons 4 cwts. 3 qrs. lead, and 44,484 ounces of silver.

BRILLIANT.—Mr. N. Mayne, manager, reports for the fortnight ending September 24: The two stopes over No. 3 level west, where I have six men working, are still carrying on an average 18 inches of stone. No. 4 west stope, where there are three men working, is at present carrying 2 feet of stone. Of the four stopes over No. 3 west level Nos. 1, 2, 3 will average 1 feet of stone, whilst in No. 4 of these stopes there are at present 8 feet of stone. No. 5 west level footwall stope is at present carrying 18 inches of stone. The three stopes over No. 3 west level are carrying on an average 2½ feet of stone. The two stopes over No. 6 level east are at present carrying throughout them 1 foot of stone. The five stopes over No. 7 west level are carrying on an average 3 feet of stone. The single stope over No. 7 east level is at present carrying 18 inches of stone. The single stope over No. 8 level west is at present carrying 3½ feet of stone with large formation. The single stope over No. 8 east level is also carrying 3 feet of stone with a large formation. There is also a rise from this last-mentioned stope, intended when broken through, to facilitate dealing with our mullock, and which has been driven to date 24 feet on 4 feet of stone. No. 9 west intermediate level has been further extended 10 feet, total length to date 75 feet, where also we have broken through to the "block workings" and are now stoping on 4 inches of stone. Of the two stopes over No. 9 east level No. 1 is at present carrying 1 foot of stone and No. 2 5½ feet of stone. No. 9 east footwall drive here for the first time mentioned has been driven 15 feet to date with 2 feet of stone at its present face. The two stopes over No. 10 west footwall drive are carrying on an average throughout them 4 feet of stone. The two stopes over No. 10 east footwall level are carrying on an average 5 feet of stone. The winze from this level has been further sunk 12 feet, total depth to date 31 feet with 6 inches of stone. No. 10 east hanging wall drive has been further extended 23 feet, making its total length to date 127 feet with 18 inches of stone at its present face. No. 11 west drive has been additionally extended 12 feet, total length to date 157 feet, where we broke through to the block workings on 1 foot of stone. There has been nothing done at No. 11 east footwall drive. In the stope, however, above this drive we are at work with the machine on about 18 inches of stone. The crosscut for the hanging wall at No. 11 east level has been extended an additional 23 feet, total distance to date 40 feet, where we also met with a 6 inch leader in the formation we are carrying. Approximate output of quartz for the fortnight 1441 tons. I have also further to report to you that the new boiler, &c., has been satisfactorily erected and is now working well up to expectations, effecting a saving in fuel, additional steaming facilities, and a guarantee against all inconveniences arising from want of plenty of boiler capacity. The necessary building alterations and additions are also well on towards completion.

CHAFFERS.—The following report dated September 24 has been received from the company's managers, Messrs. Bowes Scott and Co., Coolgardie:—No. 1 shaft winze sunk 6 feet, total 61 feet, panning 10 dwts. The lode in this winze has widened since last report; it is composed of a schistose material and quartz, and does not contain so much iron as formerly. The winze is now below water level, and has for the present been stopped owing to our not being able to cope with the water. No. 2 shaft sunk 1 foot, total 101 feet. We have now put it to miners to sink this shaft. It is intended to erect the machinery here, and all work will now be confined to this shaft.

EMERALD (Reward).—The manager reports under date Yalgoo, September 21, as follows:—New main shaft. The water in this has, as I anticipated, compelled me to stop work here after reaching a depth of 54 feet. The quantity of water had so increased that two men constantly at the windlass could just keep it down. This meant that so little of the labour was really utilised in deepening that it was better to stop. After stopping I finished the timbering to the present bottom, so that nothing more can be done here until the engine is going.—Re new machinery. The stoppage of the new shaft until the engine is ready has, if possible, increased my desire to have this erected as soon as possible, so, until it is going, there can be practically no development on the mine. The engine bed has been got into position, and the cylinder, guide bars, and crank shaft got up, but I have had a great deal of trouble with the pistons. The rings had been so fastened together by the solidifying of the old lubricant, evidently a very poor one, that I finally had to cut through their fastenings before they could be mutually disengaged. However, this has been successful, and the piston is now in the cylinder. I regret to say that the necessary repairs to the boiler haven't yet been effected, but no effort is being spared to push them on.

BARTER GIFF PROPRIETARY.—The directors have furnished the shareholders with the subjoined extracts from recent reports and cables from Mr. Whitford and Captain Bissenberger, the manager of the company's mines:—Mr. Whitford, who managed the company's mines until the arrival of Captain Bissenberger, reported on March 30, with other favourable details, to the following effect:—Lease No. 1127 east. On the western portion of this lease and near the boundary of 132 east is a large ironstone blow. South and east of this formation is a large area of what is locally termed "tucker ground"—i.e., ground which will always pay dry blowers. In my opinion the gold on this ground has been denuded from the "blow," which resembles the Great Boulder stone formation, and will, I believe, on development, prove to be one of the most important finds yet made in the district. Water. In the water shaft sunk 120 feet on 132 east there is a depth of water of about 25 feet. By the excavation of chambers at the bottom of this shaft you will be enabled to obtain storage of sufficient water for milling purposes on the whole of your property.—The new discovery. On 132 east, at a depth of 80 feet, about 16 feet, average 2 ounces of gold to the ton. This discovery adds enormously to the value of your claims, and it is certain the mine would never have been sold had it been made before.—Prospects. The bulk of the ore in sight in No. 1 shaft, apart from the before-mentioned lode, averages about 3 or 4 ounces of gold to the ton, and you will have no difficulty in maintaining an average yield, when you commence milling, of something over 2 ounces of gold to the ton. With the unusual facilities for economical working possessed by this property I can certainly work ¾ ounce stuff at a profit. By cable of July 11, Captain Bissenberger states:—Confirm Whitford's report. Lode looks exceedingly promising, 8 feet wide. By letter of July 13, he writes:—I am procuring an assay plant, and have engaged an assayer for the mine, as I find so many lodes and formations all carrying gold more or less, that I can keep him fully employed. By letter of July 27:—Work done up to July 24. No. 1 shaft 6 feet by 4 feet in the clear, depth of shaft 98 feet. Crosscut to the south at 80 feet level; 63 feet, driven for the fortnight ending July 24, 27 feet, making whole length of drive 90 feet from shaft. The lode is 61 feet from shaft, and is 8 feet wide. Old water shaft 110 feet deep, with 20 feet of water. No. 2 shaft 6 feet by 4 feet, in clear depth 70 feet. No. 1 level south 47 feet, driven for fortnight ending July 24 15 feet, making in all 62 feet from shaft.—By letter of August 8: No. 2 shaft. Sunk shaft 14 feet for fortnight. Raised brace 5 feet, making a total depth 89 feet.—By cable of August 14: Shaft No 1, total depth 98 feet, driven south on crosscut 110 feet, driven east 28 feet along the footwall, driven west following hanging wall 10 feet. Lode Looks exceedingly promising. No. 2 shaft total depth 100 feet. Water was struck at this point, 70 feet level driven south 65 feet.—By cable of August 15: Splendid gold has been struck in the shaft No. 1 80 feet level, 61 feet south of shaft, 11 feet west of crosscut following hanging wall.—The immediately subsequent letters deal at length with the amount of timbering done, which necessarily occupied much of the labour available—*e.g.*, by letter of September 5: Busily engaged preparing timber for No. 1 shaft and Haggard shaft.—By letter of September 12. I had a visit from the Minister of Mines, Mr. Wittenoom and party, and they all congratulated me on the progress I had made in so short a time.—In report for fortnight ending September 13. No. 1 shaft west drive extended 10 feet, total from crosscut 39 feet. Have erected whip pole on this shaft. . . . There is 40 feet of timbering to be put in between the surface and the 80 feet level. I have also had to cut a plat at this level. No 2 shaft north drive is in 20 feet from shaft, have started to drive west 10 feet from shaft. Am putting in this drive on account of the water coming in from this side of the shaft. I think it quite possible that the water is coming from an unexplored lode, and as the ground is soft enough to pick it will not be very expensive to drive.—Haggard shaft. The timber is all ready for this shaft.—Office note. Being in need of 3000 or 4000 bricks for the furnace and buildings, and finding the lowest price he could get them delivered on the mine was £32 per 1000, Capt. Bissenberger put on two men and succeeded in making even better bricks at the cost of £30 for 6000.

FREDERICK THE GREAT.—The following report has arrived in London from colonial directors: We have the honour to report the following progress in your mine during the past fortnight: The level south at No. 5 and 630 feet from the surface has been driven a further distance of 11 feet and timbered, total south of main crosscut 701 feet, a few colours of gold have been seen here. A crosscut has been driven east through the reef at this point a distance of 10 feet, total east from the hanging wall 16 feet, the top of this crosscut is all in quartz of nice appearance, and in the bottom there is a horse of sandstone which the stone is riding over. The winze below this level has been sunk a further depth of 11 feet, total 20 feet. The stone in the bottom of this winze is 2 feet wide, going down very straight and showing fair gold. There is black slate in each end of the winze, and it looks like as if there is more stone in the east. The rise above this level 90 feet south of the main crosscut has been put up and timbered 4 feet, total 17 feet. The stone is white and broken up at this point, so we have discontinued this work. The intermediate level north 58 feet below the 580 level has been driven 1 foot, total north of winze 62 feet. As the gold-bearing stone is rising very fast this level has been stopped, and it is intended to drive the level higher on the reef. The stone in the first stope over this level shows a little gold. This stope has been filled up with 200 tons of mullock during the fortnight, and a second stope started from the winze above this first stope. The stone in the second stope shows a little gold on the eastern side. A stope has been started on the south side of winze. The stone here is of promising appearance, and at times shows a little gold. Owing to mullocking up the stopes and the water supply department cleaning out the pipes leading to the company's supply, we have been unable to keep the batteries going this fortnight, but crushing has now been resumed with 25 heads of stampers, and the batteries will be washed out on Saturday, October 17. We enclose statement of accounts, also vouchers for last fortnight's payments. Arnold's receipt will be forwarded next fortnight.

GREAT SOUTHERN TIN AND GOLD FIELDS.—The following is the text of the mining manager's report: Toora, Victoria, September 26. I have much pleasure in informing you that the race (1¼ miles) is now finished from the weir to end on the mine. Also that a race has been cut from the head race to the lower end of Lake's Gulley to throw the water into the creek. The water was turned on on Friday, the 25th inst., and reached the mine at five o'clock in the evening, a magnificent stream. The race runs well, the levels are perfect, the flumes are strong and substantial. Altogether the company has now a good race that will carry a supply of water which, I believe, will meet all requirements. I am putting down 5 chains of boxes in tail race, clearing the course of the pipe line of timber and scrub, so as fix pipes. The mining manager and local director still fully anticipate commencing sluicing for revenue on November 21, as previously anticipated.

GULLEWA.—We are informed that the directors, being anxious to obtain an independent report on the property, availed themselves of the opportunity of a visit to West Australia by Mr. James MacTear, a well-known consulting engineer and metallurgist, and have received the following cable from him, which confirms the views all along held by Mr. Wynn and others as to its value:—"The result of the last crushing was 25 tons, 63 ounces. Have deposited 135 ounces with bank. The bank will credit us at once with the value of the bullion. Am quite satisfied. Much pleased with the appearance of the mine. Wynn, a competent and reliable manager, has placed in our possession a large body of ore. Ore reserves in sight estimated tonnage 4000 tons. Pieces of quartz very rich in free gold. Water very scarce.—MacTear." As regards the water question, Mr. Wynn is confident that sufficient water to keep the machinery constantly supplied will be found on crosscutting the reef at 200 feet level, and the shaft is being rapidly pushed down for this purpose. As advised by mail of September 21, the shaft was then down 155 feet, so that the directors expect very shortly to hear that Mr. Wynn's statements have been further verified.

HANNAN'S LODE.—The following report, dated September 26, has been received from the company's managers, Messrs. C. J. McCulloch and Co., Kalgoorlie: During the fortnight No. 3 crosscut at the 100 feet level in No. 1 shaft has been driven a further distance of 24 feet, making a total of 82 feet from shaft. The remaining 78 feet will be driven from No. 3 shaft. The ground is still unsettled, and rich deposits cannot be expected until more settled country is reached. I shall recommence the sinking of No. 1 shaft, which will now constitute the main shaft. Although the country is unsettled, it is advisable to complete the crosscut uniting the two shafts, as fresh developments may occur which will serve as a guide in future operations at a lower level. The crosscut will also be of great advantage in ventilating the mine. No. 3 shaft has been sunk a further depth of 13 feet, making a total depth of 91 feet. At 92 feet the 100 feet level of No. 1 shaft will be reached, and a crosscut will be commenced to meet the crosscut from No. 1 shaft, in which, at 31 feet, a diabase rock was met with in contact with veins of lode material. I regard this as the most favourable indication met with hitherto, as contact with or proximity to eruptive rock is one of the conditions of richness and permanency on this field.—P. Connolly.

KINSELLA.—Mine report for the fortnight ending October 1:—100 feet level north stope, section 14 Four men working here. Lode 5½ feet wide.—100 feet level south crosscut west, section 21. Have started to drive west at No. 3 south shaft, and are now in 12 feet passing through leaders, and expect to reach lode sunk on in this shaft during this week. Four men here.—100 feet level crosscut 500 south of main crosscut, section 23. Crosscut west has been extended to a total of 59 feet. A crosscut east at same distance south has reached a distance of 29 feet.—100 feet level south stope, section 21. Six men here. Lode about 2 feet wide.—45 feet level intermediate drives north and south of No. 1 north shaft, sections 15 and 16. North drive is now in 76 feet from shaft. Lode 4 feet wide. Six men. South drive is in 85 feet section 16. Lode 3 feet. Six men here.

LONDON AND WESTERN AUSTRALIAN EXPLORATION.—Mine manager's reports to hand: Mertzy's (Mount Sir Samuel), Hansen's shaft. Total depth 81 feet 6 inches, reef 6 feet 6 inches, carrying 2 ounces of gold per ton. This reef looks as if she had come to stop.—Boundary shaft. Total depth 39 feet, width of reef 22 feet. This is a fine body of stone in decomposed slate country, from 25 dwts. to 30 dwts.—Davis shaft. I am now 5 feet in the reef. She is exactly the same stone as the boundary shaft and same value.—British King (Darlot). Vertical shaft sunk 98 feet, reef cut at 84 feet. Lode 18 inches wide, showing gold freely.—No. 2 shaft. Reef cut at 49 feet, sunk 24 feet further on course of lode, a nice defined reef 2 feet wide. Dollied sample in which no gold was visible, estimate same at 1¼ to 2 ounces per ton. I am very favourably impressed with the property.—Find on Block 48 Hampton Plains. Drives north and south have met connecting shafts Nos. 1 and 2, distance being 142 feet. The stone appears about the usual quality and width, gold can be seen in breaking in both shafts.

LONDON AND WESTERN AUSTRALIAN INVESTMENT.—Progress report to hand: Hannan's water rights, 88 to 92. The five shafts have now been sunk to a depth of 90 feet each, and have been timbered to a depth of 40 feet each, on average. The country being passed through is chiefly soft kaolin and yellow clay, and the work is progressing very favourably. Further frontages on the company's town blocks at Menzies have let at good rentals for periods up to five years.

MOUNT LYELL MINING AND RAILWAY.—Engineer in charge of mine reports for week ending September 23:—No. 1 tunnel. Drive extended 5 feet, total 111 feet.—No. 1 tunnel north drive. Drive extended 3 feet, total 80 feet.—No. 3 tunnel main crosscut south drive. Drive extended 6 feet, total 42 feet.—No. 3 tunnel main crosscut north drive. Drive extended 8 feet, total 44 feet.—No. 4 tunnel south drive. Drive extended 4 feet, total 384 feet.—No. 4 tunnel south drive No. 3 crosscut. Crosscut extended 3 feet, total 80 feet.—No. 4 tunnel south drive No. 3 rise. Rise put up 4 feet, total 43 feet.—Surface work, No. 1 bench, Stripping of overburden continued.—No. 2 bench. Stripping overburden and breaking of ore continued.—No. 2½ bench. Stripping continued, exposing high grade ore on wall.—Chief metallurgist reports for week ending October 25:—Hauling line. New rope put on smelter side of line.—Smelting plant, Blast furnace No. 1 in operation. Cutting timber for extension of building for new furnaces. Formation of slag dump siding completed. Will shortly begin platelaying. Now widening slag dump in front of building with embankment of earth to gain storage room for matte and slag. Bringing in water supply from middle fork to large supply pump. Have recently diverted east fork into middle fork along line of old channel remote from foot of slag dump.—Converter department. Finishing carpenter work of building, putting in windows, siding matte bins, &c. Both boilers in place and brickwork in progress. Blowing engine, masonry and foundation, and brickwork finished. Erection of various parts in progress. Pillo blocks and flywheel, &c., to place.—Converters. Excavation begun and completed. Concrete layer of foundation finished.—Remelting furnace. Erection in progress. Retaining wall of loading shed in hand. Weather bad, snow and hail.—Railway engineer reports for week ending October 26:—The laying of the rack is now proceeding very evenly and satisfactorily, but has been retarded by the wet weather. Good progress is being made with the various works in hand, and the ballasting is now entirely finished.

MENZIES GOLD ESTATES.—Mine manager's report, dated October 3:—The Aurelia No. 2 shaft has been sunk 9 feet, making the total depth 129 feet. The lode seems to be getting richer as depth is attained. At present we have no proper walls in the sinking. The quartz is more scattered throughout the formation than it was last week, and a drill hole into the hanging has proved there is more quartz in that side carrying gold, but to what extent I cannot say yet, as it has not been tested. This will be done later on, as for a time I shall stop the sinking and commence to drive a level both north and south. A sample from a small streak of quartz at bottom assayed 1 ounce 14 dwts. 3 grains per ton. The vein in the rise in back of No. 1 level between No. 1 and No. 2 shafts is a bout 1 foot in thickness. This stone I have not tested yet. The Oleone shaft is down 95 feet. Ground very hard. Progress for the week on main shaft on Etsenna has been 11 feet. The three concrete foundations for engines are finished, and two of the engines in place. The belt tightening gear is also fixed in place. All the timber for building chutes, &c., is at hand. The water pipes for supplying battery will be laid next week.

NEW OPTIONS.—Extract from letter of Mr. T. G. Davey, superintendent, dated October 3:—Mining. During the week I have had two men cutting out a plat to receive the ore at the surface obtained from the main shaft. In doing this the continuation of the Monarch lode has been exposed, and payable stone has been obtained. The lode at the bottom of the shaft, which is now 80 feet deep, continues to maintain its size, and occasional rich specimens are being obtained. Its average value is estimated at 15 dwts. of gold per ton.—Surface prospecting. The two men engaged in prospecting on the surface have obtained very encouraging loam prospects at a distance of about 400 yards south of the Monarch shaft on the eastern side of the range. I have put them to drive a shallow tunnel with a view to intersecting the lode or shoot, from which this gold has emanated.

NEW ZEALAND CONSOLIDATED.—The Inkerman Combined Gold Mines (Limited) has been formed, working capital provided, and the Inkerman and Asquith properties transferred to that company. An engineer of reputation has been engaged, and satisfactory reports on the mines are to hand from the company's representative in New Zealand, showing that there are several reefs on the properties, the outcrop of one being 5 feet in width. The shaft is down over 515 feet below the outcrop, and the mine sufficiently developed to enable the company's representative to congratulate the board on having secured what is locally considered to be the pick of the field. The work upon the mines is proceeding rapidly, and additional labour is being secured as opportunity offers. Coal has been discovered adjoining the property. The company's representative has made application for a further 100 acres of Crown lands, which will be useful for timber and coal purposes. Our own company has secured the services of Mr. W. St. Auburn as consulting engineer, and he is at present in New Zealand reporting on the above property and other valuable interests which have been secured.

NEW QUEEN.—The following fortnightly report has been received from the mine, dated Charters Towers, September 11: The vertical shaft has been sunk a depth of 344 feet, making it 103 feet from No. 5 formation, and 385 feet from surface. We cut a cross formation 93 feet below No. 5 plat fully 6 feet in width, carrying a thin vein of quartz on the hanging. The water is again coming from the bottom during the last two sinks, and is now making 150 gallons per hour, and so far has not lessened the water from the dam which was fixed in the No. 4 chamber. The water is coming all over the bottom of the shaft. The eastern level, No. 5 formation, has been extended a further distance of 25 feet, making it 280 feet from the vertical shaft. The reef maintains the same average, about 15 inches, some of the stone being fairly well mineralised. We hauled 67 trucks of quartz from the level.—W. Henderson.

OOPAGON EXPLORERS.—Extract from mine manager's report, October 1:—Southern Boulder (Hannan's). Main shaft has now been cut down for a depth of 20 feet. After the middle of the coming week I hope to have all labour concentrated on this shaft, so as to enable us to make good progress, and to have the shaft ready for the machinery when it arrives.

SOUTH MOUNT LYELL.—Shaft section 172·91m. The shaft has been sunk a further depth of 4 feet, or a total of 24 feet 6 inches from surface. Country come in heavily mineralised with copper pyrites. The indications are extremely favourable. The water is becoming troublesome.—Central tunnel section 112·31m. The face has been advanced a further distance of 1 2 feet 6 inches for the week, or a total distance of 104 feet from the opening set. Country in face becoming slightly mineralised.—Main tunnel section 4·92m. The face of this tunnel has been advanced a further distance of 7 feet for the week, or a total of 504 feet from opening set. Country conglomerate, water making very heavily.

WATER TRUST, MINING, AND PUBLIC CRUSHING COMPANY OF WESTERN AUSTRALIA.—Report on operations:—New Victoria South Mines. The general manager (Mr. Carl Hesse) reports that the average assay value of ore raised during fortnight ending September 26 was 4 ounces 9 dwts. 21 grains. The mine manager reports for the same period: B 2638 No. 1 main underlay. Shaft sunk 6 feet, total depth 83 feet. The reef in the sink has improved considerably in quality, but is much about the same in size. Very good shotty gold can be seen in the stone, which after is heavily mineralised, especially with galena, which carries a lot of fine gold. The reef gives every appearance of making. There is about 4 feet of formation showing. The ground is very favourable for working. 35 feet level east drive extended 14 feet, total 22 feet from main underlay. Reef about 2 feet 6 inches of solid stone, showing every appearance of widening, carrying a little fine gold. There is about 8 feet of formation showing across the face, intersected with several quartz leaders varying in width from 1 to 6 inches. The footwall is well defined, composed of solid granite. 8 feet level surface drive drove 13 feet, total 22 feet. Since last report this reef, which is gradually bearing south-west, has widened out to 6 feet of solid quartz, all of which is carrying visible gold.—Notes on main underlay. The samples which I had dollied were taken indiscriminately from the dump. The result was very satisfactory, and it proves to be a very favourable milling stone. 20 tons of quartz raised for the fortnight, total now at grass 50 tons. B 2021 No. 2 underlie shaft sunk 4 feet, total depth 50 feet. Reef much about the same in size as in previous report. The stone is slightly mineralised, showing fine gold. I intend starting to drive south in this shaft very shortly. On the following blocks—viz., Nos. 2828, 2827, 2577, and 2609—I applied for and obtained concentration of labour from for the period of three months, so as to enable us to thoroughly prospect B Nos. 2638 and 2021, and at the same time to trace the course of reefs by means of drives from the latter two blocks to the former ones, and I also wish to deepen the main underlie and extend the drives in the same.

YALGOO PUBLIC BATTERY.—The following report dated September 9 has been received from the company's managers, Messrs. F. W. Preil and Co: Engine shaft. I have recommended sinking in this shaft, having arranged about miners. There are now three shifts working, but progress is very slow, owing to the hard country rock and inflow of water, which is now about 150 gallons per hour. This has to be hauled with windlass and delays sinking considerably. The present depth is 58 feet, 3 feet having been sunk since work was resumed. The water now rises 4 feet 6 inches in shaft. The men employed in this shaft are in receipt of £4 per week.—Crosscut. The crosscut has been extended 20 feet during the fortnight, making a total length from the main shaft 130 feet. A further distance of 27 feet will connect with engine shaft.—Surface work. All bed logs required for the battery plant are now on the ground, and the excavations necessary for same have been made. I am now putting down bed for pumping engine, and hope to have same in position in a few days.

CHAMPION REEF (Nannine, W.A.).—Circular issued by the directors:—Captain Osborne having resigned the management of the Champion Reef Mine for the purpose of taking over the management of an extensive copper property in North-West Australia, your directors have appointed as his successor Mr. John Dunstan, who has had a large mining experience in the Australian colonies, and has been strongly recommended to the board by their Australian colleagues. Captain Osborne handed over the management to Mr. Dunstan on August 21 last, and the directors have much pleasure in submitting herewith some extracts from Captain Osborne's final report, dated August 29, which gives particulars of the development of the mine since it came into the company's possession.—D shaft, north drive. This has been driven 70 feet, a portion only of the lode—the footwall portion—having been removed, but sufficient to indicate a massive, fairly productive reef, and be it understood that the rather peculiar feature of all the big lodes hereabouts is that the most valuable division of the reef increases in productiveness as the hanging wall is approached where it is richest, and as no portion of the hanging wall side of the lode has been removed in driving, the most fruitful of the precious metal remains intact.—South drive. A gallery in this direction has been extended 10 feet (total length N.S. 180 feet) along the footwall side of lode, that portion extracted exhibiting a dense body of superior milling stone. About 70 feet south of shaft (D), we are crosscutting the great lode at right angles to ascertain its width. 17 feet has been driven (without reaching the hanging wall side) into a dense, compact body of quartz, perfect reef from any rock intrusion, while parts are beautifully tinted with the copper carbonate and magnificent ores, nearly the whole being freely charged with iron and arsenical pyrite—the miner's mundic—gold being visible in combination, while the lode, in its entirety, discloses superior grade ore. The texture of the gold, too, is found coarser, as the west side is approached, while it is fairly distributed, needing no artificial aid to discern.—Centre outcrop. To unfold and ascertain the character and quality of this great mass of stone, an open cut has been made fully 100 feet in length, and say 5 feet deep. So far as uncovered, the entire body will be milled. It, however, at any time a small division is noticeable—as in all reefs—of minor quality, it will of course be rejected. While the work of excavating was proceeding, very valuable stone was unveiled. It is worth noting that the south end of the outcrop, about 100 feet from the centre, is by far the narrowest portion of the lode anywhere visible—say 4 feet—but a few feet south of this point at 94 feet deep, where the crosscut referred to above is being driven, the lode is 17 feet wide, and not fully pierced. No need, therefore, to be sceptical as to the permanency. As a matter of fact the lode at deepest point reached, not only retains its great width, but where tested is larger, and more generally productive than the surface line indicates.—Rise. From the floor of D shaft a rise has been put up on the lode inclination on the footwall side, right through to the open cut, 94 feet. This work was effected for ventilation, and for facilitating stoping, when this mode of operating on the reef is required.—F shaft. This was sunk before the property was transferred to the Champion Company. Most of the driving has, however, been executed since, while the open cut (N) behind the shaft's mouth, some 60 feet long, is a recent operation disclosing very superior, even high grade ore, the reef averaging at this point 6 feet wide.—North drift. This has been driven 66 feet. In the face the hanging wall, seen for first time, exposes the narrowest point of the reef, having narrowed to 5 feet, but the average width is much in excess of this. All the stone from this drive has been paddocked for milling. South drive has been communicated with G and H shafts, a distance of 124 feet along the line of the lode, that portion extracted displaying good grade ore. Width not determined.—G shaft. This is a round shaft (vertical) sunk on the west side of the lode, which is pierced at 69 feet, and continued to 75 feet deep—25 feet below water level. H shaft is a rectangular shaft sunk vertically through the lode, thence on the underlie 53 feet, total 75 feet. A portion only of the reef on the footwall side having been removed showed nice gold in parts—the whole being fair milling stone. At deepest point, a crosscut and a drill hole into the reef 12 feet indicated no sign of nearing the hanging wall, that portion penetrated being dense quartz.—Drift. Driving south is being proceeded with a distance of 79 feet having been attained, following the line of lode, which is very massive. The face at this drift is at a point immediately below the centre of the Snake outcrop. The stone is fair milling, and apparently abundant.—I shaft. 15 feet deep, big lode, stone averaging in excess of 1 ounce of gold to the ton of stone as proved by battery treatment.—K shaft. Round, 60 feet to water level.—L shaft. Main vertical winding and pumping shaft, 6 feet by 8 feet in the clear, having three divisions, two for winding with cages, and one 4 feet by 6 feet for pumping purposes. Sunk to 125 feet. Sinking will be resumed in a day or two, with the aid of a steam winch.—M shaft is 46 feet deep on parallel reef, made up of healthy looking laminated quartz, which will be fully tested at 200 feet, when the main shaft is sunk, which it will intersect (say) in three months.—O shaft. Underlie shaft on Centre lode sunk to water level 54 feet.—Drift north. A drive has been put out 38 feet, exposing an average width of lode of 2 feet, which is practically vertical. The quartz is highly charged with iron pyrites, and at one of more points is of a payable character.

South A drive has been extended 8 feet, exhibiting identical stone to that of the north drift.—P shaft. A vertical shaft to below water level 60 feet deep. A crosscut easterly at water level driven 61 feet intersected the Contra reef. This shaft will supply fresh water to the boilers for steam generating powers.—Machinery developments. Foundation excavations completed, both for winding, pumping, and engine and battery plant. Masonry for the former and boiler walled in complete. Steam winch for hoisting dirt from main shaft during sinking is in position and steam connections to boiler finished. The cement for the battery foundations has arrived and the concrete bedding will be commenced immediately. No delay will now occur in pushing ahead with this plant.—Synopsis. Total shafts sunk 572 feet, total drifts 576 feet, total crosscuts 81 feet, total rises 94 feet—1323 feet. I think it will be conceded that, for so young a mine, these developments will be hard to eclipse. There can be no difference of opinion about the quantity and good payable quality of stone immediately available for milling.—P.S. Crosscut in drive south of D shaft has pierced the lode on to the hanging wall side, and is 18 feet wide, a magnificent body of auriferous stone. Your directors think Captain Osborne's report will be regarded by the shareholders as very satisfactory. The shareholders will also be glad to know that the whole of the machinery has now been for some weeks at the mine, and that all available labour has been concentrated upon its erection, and upon that of the necessary buildings. Mr. Dunstan telegraphed on October 1:—"We are now in a position to go without delay to completion," and the directors hope in a short time to hear that the erection of the machinery is completed, and that the 20 stamp Fraser and Chalmers' battery has commenced crushing. The latest advices are to the effect that the first clean up may be expected in December. Your directors are very sanguine as to the result, as crushings made in local batteries of stone taken from the properties situated both north and south of the Champion have given very excellent returns. The Champion Extended, which is situated on the northern extension of the Champion Reef, crushed 24 tons and obtained 75 ounces of retorted gold. The Caledonian Extended, which is situated on the southern extension of the Champion Reef, crushed 420 tons and obtained 2378 ounces of gold.

COLUMBIA (Charters Towers).—The managers at Charters Towers report as follows:—The shaft is now down 476 feet 3 inches, being 25 feet 3 inches deeper than the surveyor's estimate for striking the Columbia reef. We, therefore, deemed it advisable to cease sinking for the present, and open out on the formation met at 328 feet. This formation is of a promising character, and the reef, though small, has every indication of opening out. Its bearing is very different to the bearing of the Columbia reef, so far as shown in the workings of the neighbouring mine. However, should the bearing of the Columbia reef have altered to that of the reef through at 328 feet, it would cause it to be met much shallower, and this may probably account for the difference between the surveyor's estimate and the depth at which the reef was met. We have given the matter serious consideration, and think it best to open out on this formation, as by that means we will be put in possession of additional reliable data to work on, and if necessary in future to resume the sinking, it could be carried on to better advantage by working with the machine rock drills, the ground at the bottom being most unfavourable for hand work.

CURTIN DAVIS PROPRIETARY.—Mine manager's report for week ending September 26:—420 feet level driven 5 feet, total 245 feet. During the week the lode turned sharply to the south. There is now 9 inches of ore against a splendid hanging wall which is going nearly due south, making an angle of 20° from the last 100 feet of the level. I expect the lode to come back to its course again before driving far, or this may prove to be a cross lode. An assay of clean ore from against the hanging wall this week gave 615 ounces silver per ton. This is a much higher grade ore than we have had in this drive as our best assay before this was 287 ounces. Winze below this level sunk 3 feet, total 35 feet. The lode is slightly broken, but is 2 feet wide and carrying some good ore. 560 feet level driven 6 feet, total 248 feet. Lode 2 feet wide, of formation with a vein of siderite and iron pyrites against a splendid footwall which is nearly vertical. Winze below this level sunk 3 feet 6 inches, total 30 feet 6 inches. There is a splendid body of yellow copper ore 20 inches wide going down in the bottom of this winze and looking better as we get down. 680 feet level driven 3 feet 6 inches, total 243 feet 6 inches. Lode 2 feet wide, with some high grade fahl ore throughout 1 foot of the lode next to the hanging wall. A sample of clean ore taken from 242 feet in this tunnel has given 1232 ounces silver per ton and 18 per cent. copper, showing that the high grade ore is continuing into the hill. During the week there was a slight change of country in this drive, but it is still bad for working owing to so much iron pyrites being mixed through the formation. 840 feet level driven 4 feet, total 216 feet. There is from 5 to 6 inches of iron and copper pyrites against the hanging wall with a little fahl ore mixed through it. The country is also getting more settled. 1000 feet level driven 3 feet, total 70 feet. Lode 2 feet wide composed of iron pyrites and quartz. It is very strong and looks well for meeting with ore ahead.—Assays, 560 feet winze, copper pyrites and fahl ore, 434 ounces 9 dwts.18 grains silver per ton, 10·9 per cent. copper.—680 feet level, fahl ore, 447 ounces 7 dwts. 14 grains silver per ton, 9·3 per cent. copper 680 feet level, stibnite and copper pyrites 15 ounces 13 dwts. 4 grains silver per ton, 7·7 per cent. copper. 420 feet level, fahl ore, 615 ounces 8 dwts. 19 grains silver per ton, 0·8 per cent. copper. 680 feet level, fahl ore, 1332 ounces 16 dwts. silver per ton, 18·2 per cent. copper. 840 feet level, stibnite, 23 ounces 1 dwt. 20 grains silver per ton, copper trace.

EAST MURCHISON UNITED.—Mine manager's report September 19; Underground work. Dunsford's shaft has been timbered from the bottom to the plat, a distance of 40 feet. Men now engaged putting down truck line, and putting in timber along the level to start stoping. We have also laid down a tramline from No. 2 shaft to the battery, as there are about 500 tons of ore at this shaft. This will make handling cheaper than carting.—Battery. The battery was started on September 10. We put through 12 tons of surface stone on the 11th and 12th just to get the plates in order, and made a final start on Monday, September 14, full time, and everything is going satisfactorily. I intend running four weeks before cleaning up. We have had a week's run now, and from all appearances the ore is worth 1 ounce 8 dwts. per ton. We have put up the ore crusher temporarily, which is a great assistance, as the stone was very hard to break by hand. The carpenters will make a start with the erection of the permanent poppet heads next week. The timber has not all come to hand yet, but everthing will be pushed on as quickly as possible. Labour is very scarce here at present, even at any price.

DOROTHY.—Fortnightly report:—Incline shaft. This has been sunk a further distance of 9 feet, making a total of 120 feet. Have started cutting a plat on south side of shaft, and expect to complete same this week when sinking will be resumed.

CONTINENTAL AND WESTERN AUSTRALIAN TRUST.—The following information is to hand by mail from Mr. Edward Hooper, the company's manager in Western Australia: O'Shea's leases. A sample from the shaft taken last week gave a return, by fire assay, of 9 ounces 16 dwts. per ton. This property has been purchased outright on account of the above company and the Omnium Gold Mining Association (Limited) jointly,-Champion leases. The mine manager reports that the reef in the drives north and south from the main shaft shows rich gold throughout. The reef is of large size wherever cut, and there is a splendid supply of fresh water at 45 feet depth.—Coolgardie Town blocks. The buildings on your blocks will be completed in three weeks time. Five rooms are already let at advantageous prices.

MOUNT ZEEHAN (Tasmania).—Manager reports for week ended Sept. 25; Silver Queen section, No. 8 lode main shaft. No. 3 level extended 11 feet, total 63 feet 6 inches. Have cut a nice branch of ore, estimated at 1 ton of silver lead per fathom. Will drive north on this, which by present appearances will junction with branch previously cut. Concentrator running on ore from Zeehan-Montana Company. Machinery working well.

WAIHI GOLD.—Extracts from mine manager's letters, Waihi, September 22:—Adit level. The crosscut mentioned in last month's report to intersect No. 2 branch of Welcome lode was only extended 3 feet to north-western side of original level, when No. 2 lode was met with, and has proved to be at this point 12 feet in thickness, composed of a fair class of ore throughout the whole width.—Welcome lode No. 1 level. Western end has not been advanced during the month. In my last it was stated the lode was 4 feet wide, intermixed with seams of sandstone. Since that time, a crosscut has been driven close up to face for 50 feet to the south-east to intersect the Welcome lode driven on at the adit. On extending the crosscut 10 feet in that direction a 3 feet reef was intersected, producing payable ore. The drive was then pushed on and at 34 feet the western lode was reached; when cut through it proved to be 6 feet wide, composed of good ore. After driving some distance into footwall, which here is rather softer than that usually met with in this end of the mine, driving was suspended and rising commenced over crosscut to tap bottom of winze sunk some time previous from adit level. The winze was tapped on rising 13½ feet, thus giving good ventilation and also proving, without a doubt, that the two levels had been driven for a considerable distance on different lodes. Cross cutting was again started to the north-west, opposite the one just mentioned; after passing through 4 feet of country rock, another lode was intersected which proved to be 19 feet in thickness. Three general samples from here assayed over 16 dwts. gold per ton. The crosscut is a total length of 69 feet, and as I have above stated, there are four separate lodes intersected in that distance, all of which have proved payable. I believe the lode in original drive will junction at some distance west with No. 2 branch, the last one intersected, and that the 3 feet reef will also, from its strike, junction with Welcome westward.—Welcome lode, No. 2 level. Western end has been extended 59 feet, which makes total length past No. 2 shaft 230 feet. The lode seems some what disturbed in face. There is a small horse of sandstone country showing in face. This being about the point where No. 2 branch strikes off, and as it is intended to develop the branch first, a crosscut is now being run into the walls for a short distance to ascertain before proceeding further.—Waihi, Sept. 28:—Western end of Welcome lode at No. 2 level has just been cut through from wall to wall, and turns out to be 36 feet in width, showing ore of good quality for the whole width. One seam in centre of lode, which is from 9 inches to 12 in thickness, gives by assay 6 ounces 13 dwts. 3 grains gold, and 42 ounces 12 dwts. 20 grains silver per ton.

LOMBARDY GOLD.—Manager reports for week ended October 3; Main shaft 150 feet level north extended 9 feet 6 inches, total 143 feet. Lode 15 inches wide, but not quite so good as formerly. Same level east extended 9 feet, total 120 feet. 75 feet level north extended 12 feet, total 73 feet. Lode 18 inches wide, greatly improved in quality. Same level south extended 12 feet, total 79 feet. Lode not quite so rich as previously, but larger and dollies fairly well. Reservoir is progressing favourably and engine foundations will be completed in a few days.

MOUNT CHARLOTTE.—Manager's mail report of September 25 states; Murray's shaft has been sunk in all 312 feet. This now completes the sinking for a time, until I drive the 200 and 300 feet crosscuts. Mineral in bottom of shaft assays 3 ounces per ton. Percentage of pyrites 3 per cent. Water about 1000 gallons per 24 hours. It is so plentiful that I cannot sell all I have to spare.—Mill. The mill is saving gold very well, but is very slow in operation. I started running the mill yesterday 16 hours per day. I have banked 9 ounces of amelted gold from 10 tons, and, of course, the mill is only partly cleaned up.

EAGLEHAWK CONSOLIDATED.—The following fortnightly report has been received from the mine dated Maldon, September 28: I beg to report that the drive at the 1300 feet level has been extended north a further distance of 47 feet, total from the crosscut 59 feet without change. The wall of the reef continues very regular, and is of a permanent character. The stone is much the same in size and quality as given in my last report. In consequence of the reef failing to increase in size or prove to be remunerative I would advise to sink the shaft another 100 feet and drive into the reef again. If the board approve of this being done I think we could be ready to start sinking next Monday. Two offers for tributing have been received, and will be dealt with at the next meeting.

HARQUAHALA (Kalgoorlie (W.A.) Mines).—Kalgoorlie (W.A.), October 5; I beg to hand you report of operations for the month of September. Developments have been continued on the more favourable points, and the line of the lode opened out on the west side of the main shaft is further developed at that point, as well as from the east crosscut from Harvey's shaft. In lease 79, in the west crosscut from the main shaft, it has been followed 58 feet farther, a total of 108 feet. In lease 1008 it has been opened for a distance of 103 feet. It is probably continuous through the length of both claims. No gold has been found in it during the month.—Main shaft. No. 1 drift, 80 feet east of the shaft, has been continued 37 feet farther, a total of 97 feet from the crosscut. The quartz vein has become more favourable in appearance and carries a little gold.—Harvey's shaft. The belt of quartz stringers running east and west have been further exploited by a couple of short crosscuts. Narrow quartz veins running irregularly were met with which contained a little gold, but nothing of real value.—Expenses. The expenditure for the month has been as follows: Labour £312, supplies £66—£178.

MYALL'S UNITED.—Fortnightly mine report to September 26:—Main shaft sunk 12 feet 6 inches, now down 277 feet. No. 1 (underlie) shaft, crosscut to main shaft is passing through a channel of hard ground, has been extended 13 feet 6 inches, leaving about 20 feet still to be driven. Winze below No. 3 level sunk 4 feet, now down 26 feet 6 inches. Drive south extended 6 feet, now driven 94 feet; the new make of stone is opening out remarkably well, now 15 feet 6 inches wide, and no sign of a wall, the stone is highly payable. Drive north recommenced and driven 6 feet 6 inches, now in 104 feet. No. 2 crosscut extended 22 feet, now 36 feet from No. 2 level, when about 20 feet in we met a formation of quartz which later on will be driven on, when I hope it may develop into a valuable shoot.—New lode. Drive south driven 8 feet 6 inches, now 22 feet in from crosscut. The appearance of the country indicates a decrease in width within a few feet. Reidy's shaft, drive north extended 41 feet in soft country, now 126 feet from old stopes, lode about 12 inches wide, but poor in gold.

SALISBURY-MURCHISON.—The following report upon the property for the month of September has been received by the directors: Salisbury lease. Operations at the 100 feet levels have been suspended for the present and arrangements made for sinking main shaft.—Agamemnon. Developments at the 100 feet levels are very satisfactory, the lode has improved in quality both ends. The north-east face is 24 feet from crosscut, and the south-west 77 feet from same point, or a total of 151 feet of proved reef, averaging 3 feet 6 inches wide, and worth about 1½ ounce per ton. Judging from the trend of the lode, I estimate we have 5000 tons of stone in sight, which will crush over 1 ounce per ton, and I strongly recommend the erection of a 10 head battery without delay. We could increase the number of stamps afterwards when a sufficient supply of water was cut in sinking main shaft.—Machinery. The machinery is nearing completion on this lease. In the course of 14 days I hope to have steam up to start the same.—E. Wattis.

WESTRALIA AND EAST EXTENSION.—The mine manager reports under date of October 3 as follows:—On lease 144, shaft No. 4, I have six men, total depth 143 feet. Size of lode 4 feet 6 inches, value 10 dwts. Heretofore the ground has been of a much softer character than we had anticipated, but it has now become very similar in character and nature to the ground at the bottom of the No. 5 shaft.—Shaft 8. Operations are suspended at this point until a trench has been cut for the laying down of the line of water pipes from Naumann's shaft to the mill, when operations will again be resumed, and the depth for a second level speedily reached. On lease 1151, south-east No. 12 shaft, I have four men. Work done 68 feet, total length 215 feet. Lode 6 inches wide, value 2 dwts. Since my last report the lode has become split. The upper part runs at about its ordinary course and dip, but the bottom part, which appears to be larger, has taken a sharper angle, but this we have been obliged to leave for the time being in order to continue our drift in its proper position. We shall probably start sinking a new shaft shortly from surface, in order to communicate with this level.—North-west drive, No. 12 shaft. Two men. Work done 6 feet, total length 127 feet. Lode 1 foot wide, value 10 dwts. The ground is somewhat harder, and more expensive to excavate.—Nos. 15 and 16 shafts. A communication has now been effected with the levels from these shafts. Some of the men are now employed in securing the underlay shaft, which will be finished in the course of a few days, when the men will be available to start a second level north-west from the incline shaft.—No. 19 shaft. Four men. Work done 61 feet, total depth 61 feet. Splendid progress has been made during the past two weeks in the sinking of this shaft, which is situated 150 feet north, about 45 east of No. 12 shaft. This shaft will be of an interesting character, as it will reveal to us whether or no the flat reef has taken a more vertical dip, which we anticipate.—Machinery, &c. The erection of the building to cover the mill, together with the construction of the plant to bring the water from Naumann's shaft to its destination, is being carried on as fast as possible under many adverse circumstances.

AFRICAN.

ANGELO.—The Anglo-French Exploration Company (Limited), as London agents of the Angelo Gold Mines (Limited), have received the following information from Johannesburg: Report of work done on this property for the month of September. South reef. No. 1 south incline third level crosscut north advanced during the month 4 feet, total length 22 feet. Crosscut south advanced during month 5 feet, total length driven 16 feet. Main east drive advanced during the month 11 feet, total distance driven 62 feet. Main west drive advanced during the month 19 feet, total distance driven 61 feet. Rise in back of main drive advanced 17 feet during month, making total height 17 feet. Drive for ore bin advanced 27 feet during month, total depth 33 feet. First level east drive driven during month 25 feet, total distance driven 277 feet. East winze sunk during month 11 feet, total depth 11 feet. West winze sunk during month 10 feet, total depth 100 feet. September 5, average width of reef 24 inches, value 589·75 dwts. September 12, average width of reef 24 inches, value 367 dwts. West rise advanced during month 10 feet, total height 10 feet.—North reef. No. 1 north incline shaft advanced during month 34 feet, total depth 452 feet. Third level east drive driven during month 12 feet, total distance driven 42 feet. West drive driven during month 20 feet, total distance driven 54 feet. Second level east drive driven during month 34 feet, total distance driven 144 feet. West drive driven during month 32 feet, total distance driven 140 feet. First level east drive driven during month 46 feet, total distance driven 213 feet. First level west drive driven during month 27 feet, total distance driven 167 feet. No. 2 north incline sunk during month 36 feet, total depth 273 feet. First level east drive driven during month 29 feet, total distance driven 122 feet. First level west drive driven during month 34 feet, total distance driven 144 feet. Drive going round shaft for ore bin advanced during month 4 feet, total distance 114 feet. West rise advanced during month 12 feet, total height 12 feet. Winze for ore bin sunk during month 7 feet, total depth 7 feet. Total footage for the month 456 feet, as follows:—70 feet shafts, 320 feet drives, 67 feet winzes and rises, 9 feet crosscuts. The aforegoing figures are taken to and inclusive of September 26. Developed during this period:—South reef 2338 tons, north reef 7030 tons.—Construction. The erection of the new winding and pumping engines at south incline has been completed, and they are working satisfactorily. The compressor is ready to start. The engine and boiler houses No. 1 north incline are finished. Excavations for the pile blocks for the 100 stamp battery have been taken out, and concrete foundations commenced.

CROWN REEF.—Directors' monthly report for September:—The directors have the pleasure of submitting the following report on the working operations of the company for September, which shows a total profit of £15,557 8s. 1d.—Mine. Number of feet driven, sunk, and risen, exclusive of stopes 1157½ feet. Quartz mined 16,209 tons, quartz on hand at surface September 30 8213 tons.—Mill. Number of days (24 hours) working 120 stamps 29 days, tons crushed 16 298 tons, tons crushed per stamp per 24 hours 4·590 tons, yield in smelted gold 4955 ounces 1 dwt., yield per ton 6 dwts. 12·836 grains.—Cyanide works. Tons sands and concentrates treated 12,804 tons, yield in smelted gold 4182 ounces 8 dwts., yield per ton 6 dwts. 12·791 grains, working cost per ton 3s. 4·140d., royalty cost per ton 1s. 3·266d., total cost per ton 4s. 7·406d.—Slimes works. Tons slimes treated 2543 tons, yield in smelted gold 330 ounces 10 dwts., yield per ton 2 dwts. 14 260 grains, working cost per ton 6s. 3·05d., royalty cost per ton 3·266d., total cost per ton 6s. 6·291d.—Expenditure and revenue. 120 stamp mill and cyanide works, 16,298 tons milled. Expenditure. To mining expenses, cost £13,992 11s. 6d., equal to cost per ton 17s. 2·050d. To transport expenses, £195 0s. 10d., equal to 2·872d. To milling expenses, £2258 7s. 9d., equal to 2s. 9·256d. To cyanide expenses, £2955 19s. 2d., equal to 3s. 7·528d. To slimes expenses, £331 3s. 11d., equal to 1s. 0·239d. To general charges, £1814 11s. 2d., equal to 2s. 2·740d. To mine development, £733 0s. 4d., equal to 10·794d. Total £22,780 14s. 8d., equal to £1 7s. 11·459d. To profit for month, £15,557 8s. 1d., equal to 19s. 1·097d. Total £38,338 2s. 9d., equal to £2 7s. 0·556d.—Revenue. By gold accounts: By 6365·05 ounces from 120 stamp mill, value £23,795 8s. 6d., equal to value per ton £1 9s. 1·816d. By 4182·35 ounces from 120 stamp cyanide works, £13,423 13s. 3d., equal to 16s. 5 673d. By 3.0 50 ounces from 120 slimes works, £1,159 1s., equal to 1s. 5·067d. Total 11,467·90 ounces, value £38,378 2s. 9d., equal to £2 7s. 0·556d.—General. The following are the particulars of the lineal development work done for the month:—4th level. Driving on south reef east and west 92 feet 6 inches.—5th level. Driving on south reef east and west 42 feet 6 inches.—6th level. Driving on south reef east and west 79 feet 6 inches. Driving on main reef leader east and west 95 feet. Sinking winzes 7 feet 6 inches.—7th level. Driving on south reef east and west 244 feet. Driving on main reef leader east and west 319 feet. Sinking winzes 138 feet 6 inches.—8th level. Driving on main reef leader east and west 26 feet 6 inches. Sinking winzes 54 feet. Crosscutting 30 feet.—9th level. Sinking incline shaft 67 feet 6 inches. Total 1157 feet 6 inches. The tonnage of ore exposed by the above works amounts to 30,644 tons. The 120 stamp mill and cyanide works ran with their accustomed regularity during the past month. Notice is hereby given that a dividend of 60 per cent, has been declared by the board for the half-year ending September 30, being at the rate of 120 per cent. per annum.

LYDENBURG ESTATES.—Mr. Stockley King reports:—Hartebeestevlakte. I was on Spinner's work most of the day and made nine pannings, with the result that I saw better gold than I have so far seen on Paardekraal or Hartebeestevlakte. I also sent six lots of rock from different parts of the reef, which is flat and 2 feet 6 inches thick. The assays show the best yield to be 5 dwts. 12 grains sabies hook. The borehole is in the solid, so we have been more fortunate than our neighbours. The hole to-day (October 12) should be from 45 to 50 feet. We are in dark sandstone, the same as they have on surface at Glynn's Lydenburg reef.

MAY CONSOLIDATED.—The directors submit the following report for the month of September.—Battery. 100 stamps ran 27 days, crushed 12,250 tons. Gold won 3700·35 ounces (average 6·041 dwts. per ton), valued at 7?s. 6d. per ounce, £13,413 15s. 4d.—Cyanide works, Siemens process. 9250 tons tailings treated, gold won 1950 ounces bullion (average 4·216 dwts per ton), valued at 60s. per ounce, £5850. Other receipts £47. Total, £19,310 15s. 4d.—Working costs. Mining 12,250 tons, cost £3219 14s., equal 13s. 5·039d. per ton. Development 12,250 tons, £1451 10s. 9d., equal 2s. 4·438d. per ton. Total, £1671 4s. 9d., equal 15s. 9 477d. per ton. Tramming 12,250 tons, £129 2s. 5d., equal 2·510d. per ton. Crushing and sorting 12,250 tons, £338 9s. 8d., equal 6 630d. per ton. £3871 14s. 9d., equal 4s. 8·283d. per ton. Total, £13,013 16s. 7d., equal 21s. 3·900d. per ton.—Tailings treatment. Siemens process 9250 tons, £1264 7s. 9d., equal 2s. 8·866d. per ton. Total, £14,274 13s. 4d. Profit, £5035 17s.—Expenditure on capital account. Construction, &c., £1363 9s. 6d.

PRINCESS ESTATE.—The following report on the company's operations for the month of September is published by the directors:—Mine. Number of feet sunk and driven 748 feet.—Mill. Number of days (24 hours) working 40 stamps 25 days, ore milled 4178 tons, yield in smelted gold 1994?? ounces, average per ton 9·56 dwts.—Cyanide works. Tons of tailings treated 2428 tons, yield (in bullion of 60?. value) 510·3 ounces.—Revenue and expenditure. Expenditure: Mining, hauling, and pumping £3477 18s. 9d., sorting and tramming £329 18s. 8d., reduction £253 6s., general charges at mine 6s. 6d. £1357 17s., working expenses at cyanide works £319 18s. 5d.; £7048 18s. 1d.; balance, profit for month £2121 14s. 8d.; total £9170 15s. 9d. Revenue: Mill gold, 1998·82 ounces at 74s., £713 8 4s. 9d., cyanide gold, 510·8 ounces at 60s., £1532 8s., water rent and licenses £2 0; total, £9170 15s. 9d. N.B. The revenue from water rents and licenses varying very much in each month, the average of the annual receipts under this heading has been adopted in this report.—Working costs per ton. Mining, hauling and pumping on 4178 tons 16s. 7·83d., sorting and tramming on 4178 tons 1s. 6 9d., reduction on 4178 tons 4?. 1·3d., general charges on 4178 tons 2s. 5d.; total 21s. 9d. Mine development redemption 6?. 6d., cyanide works (on tonnage treated, £7048 18s. 1d., on capital account—for development, Working expenses £2503 13s. 6d., machinery and plant, buildings, &c., £117 5s. 9d., total £3669 17s. 4d. Less amount redeemed from mine development on 4178 tons milled at 6s. 6 1. £1357 17s., total £3312 0?. 4d.

RANDT.—Return showing footage driven and sunk for the month of September:—No. 2 shaft. Feet sunk, *nil*. Feet driven 73½.—No. 3 shaft. Feet sunk, 25. Feet driven, 223 Feet risen, 13. Feet stripping, 36. Total footage, 364½ feet.—Tonnage of payable ore in sight. Tonnage of No. 1 reef, 17,533 tons. Tonnage of No. 2 reef, 22,581 tons. Total 40,119 tons.

WEST ROODEPOORT DEEP.—Report for August: No. 2 borehole drilled by contractor 22 feet 7 inches, making total depth 375 feet 4 inches. No. 1 shaft sunk 66 feet, making total depth 469 feet. No. 2 shaft sunk 46 feet, making total depth 166 feet. No. 1 shaft timbered 66 feet, making total depth timbered 427 feet. No. 2 shaft timbered 43 feet, making total depth timbered 141 feet. The slow sinking has been due to the increase of water in No. 1 shaft and the shortness of boys in both shafts. Compressor plant has been running well. The second 106 H. Babcock and Wilcox boiler is finished, also the compound manager's house.—Native labour. A large proportion of boys have left during the month, and the present number is very insufficient, but arrangements have been made to bring it up to that required.—Report for September: No. 2 borehole drilled by contractor 94 feet 4 inches, making present depth 469 feet 8 inches. No. 1 shaft sunk 18 feet 6 inches, making present depth 487 feet 6 inches. No. 2 shaft sunk 63 feet 6 inches, making present depth 235 feet 6 inches. No. 1 shaft timbered 48 feet 6 inches, making depth timbered 475 feet 6 inches. No. 2 shaft timbered 72 feet, making depth timbered 213 feet. The slow sinking in No. 1 shaft has been due to the quantity of water met with from the 5th of this month, which necessitated the putting in pumps. These are now working fairly well with compressed air. Surface work has comprised the erection of drilling machine, circular saw, and wood planer in the shops.—Native labour. The boys at present number about 150, fairly sufficient for our requirements.—J. G. West, manager.

WASSAU (Gold Coast).—Circular issued by the directors:—During the month of September the 10 stamp 750 lb. mill worked 19 days 14 hours and the 12 stamp 550 lb. mill 8 days 3 hours. Ore crushed 375 tons produced 762½ ounces standard gold, which realised £2975 8s. 11d. Cablegram received advises:—"Return for October 825 ounces bar gold from 463 tons of ore. 18 stamps worked 22 days."

LANGLAAGTE ESTATE.—Tons of ore sent to mill 4263. Tailings under treatment 2640 tons. Assay value of ore milled 10 dwts. Assay value of tailings 3 dwts. 2 grains. Machinery working satisfactorily. New 40 stamps. The roof is on extension of mill building. All stamps in position. Work progresses well. Foundation laid for new mill tank. 15 inch drain pipes are being laid to mill tanks. This week's rain has added 6 inches of water to the dams.

BLOCK B LANGLAAGTE.—Development 55 feet driven and sunk. Tons of ore crushed 1996. Tailings treated 860 tons. Concentrates 20 tons. West shaft development and mining, nothing fresh to report. East shaft, not so good this week and assays lower. West drive, fifth level looking better and assays higher than they have been for some time. Stopes in the east have fallen off in value, but an improvement is expected shortly. All machinery in good order. Native labour scarce for underground work.

LANGLAAGTE STAR.—Development 110 feet. Reefs looking better. Main reefs looking better. Main reef leader, 120 feet level, east stope is looking very fair. 184 feet level still rather low grade, being on junction of free milling and pyritic ore. South reef, 120 feet level, east drive open up very fairly, and it is hoped in a few days to start rising to open out for a stope. Tailings treated 470 tons. Assay value before treatment 1 dwt. 5 grains per ton. Mill 20 stamps ran 6 days 16 hours, crushing 551 tons of ore. All machinery is in good working order. Native labour fairly plentiful.

ROBINSON RANDFONTEIN.—The reduction of native wages has caused no trouble nor delay. The main shaft has been sunk to the 4th level—viz., 535 feet from surface, and the station is now being cut.—No. 1 south permanent winze. Sinking to the second level has been resumed after much delay caused by the large amount of water met with. Driving is being carried on in seven faces on the second level. The mine is looking well especially where opened up on the second level. Total footage for the week is 216 feet. Assays for the week are as follows: North drive, No. 4 winze north, 50 ounces 4 dwts. 1 grain for 4 inches. North drive, No. 2 winze north, 3 ounces 16 dwts. 3 grains for 6 inches. South drive, No. 2 winze north, 10 dwts. 5 grains for 12 inches. South drive, No. 1 winze south, 4 dwts. 9 grains for 6 inches. North drive, No. 5 winze north, 1 ounce 14 dwts. 6 grains for 8 inches. South drive, No. 5 winze north, 1 ounce 16 dwts. 22 grains for 8 inches. Erection of rock drill plant is rapidly advancing, and all machinery is working very satisfactorily.

BLOCK A RANDFONTEIN.—The temporary steam pump has been fixed at the 250 feet level main shaft, and is working satisfactorily. The cutting of the main station at this level is proceeding as rapidly as possible, and when finished and the main pump bearers put in the level will be driven. Total amount of development for week is as follows:—Sunk 22 feet, crosscuts driven 11 feet, driven on reef 53 feet, total 91 feet. Total number of tons developed, taking reef at 9 inches wide, is 674 tons. New permanent boilers are being delivered on the mine. All machinery is in good condition and working well.

PORGES RANDFONTEIN.—Footage for week 64 feet. Assays—40th level north 2 ounces 10 dwts. for 12 inches, central winze 1 ounce 19 dwts. for 18 inches, north winze 2 ounces 12 dwts. for 9 inches, south winze 2 ounces 4 dwts. for 11 inches.—Mill. 60 stamps ran 2 days 19 hours, crushing 6725 tons. Average battery ore 16 dwts. 5 grains. Average battery tailings 4 dwts. 1 grains. Cyanide treated 525 tons. Average value of charge 4 dwts. 12 grains. Native labour for mine very scarce. Water supply very good.

MYNPACHT RANDFONTEIN.—Main shaft has been sunk 17 feet, making total depth 393 feet. Formation harder but regular. New permanent engine has been started, and is working well. Masonry foundation for compressor is almost completed. Engine and compressor houses are being rapidly pushed forward.

NORTH RANDFONTEIN.—Total development for week 140 feet. The second level will be connected from end to end of the property in three days. Reef in the face 4 feet wide, assaying 15 dwts. across. Sinking in main shaft stopped in order to put in fourth level station set. Sinking will be recommenced to fifth level in about a week's time. 30 stamps are now crushing and everything running satisfactorily. 30 more stamps will be dropped on arrival of boys from Natal in about 14 days' time.

SIMMER AND JACK EAST.—Manager's monthly report for the month ending September 30:—Clement shaft. 103 feet sunk, present depth 524, white labour £518 13s. 1d., black labour £443 17s., general £295 14s. 9d., timber £584 13s. 1d., coal £72 14s.—Hammond shaft. 38 feet sunk (and station cut 6 feet, present depth 516, white labour £334 3s., black labour £191 2s. 6d., general £244 1s 5d., timber £168 19s. 1d., coal £33 12s.—Lohse shaft. 44 feet sunk, present depth 417, white labour £380 7s. 6d., black labour £439 13s. 6d., general £251 15s., timber £367 2s. 6d., coal £102 17s. 6d. At the Clement shaft the average cost per foot in September was £20 6s. 1d. At the Hammond shaft the average cost per foot in September 30 £23 16s. 3d. At the Hammond shaft the average cost per foot to September was £23 4s. 7d. Average cost per foot to September was £26 10s. At the Lohse shaft the average cost per foot in September was £20 9s. 11d. Average cost per foot to September 30 £17 9s. 11d. At the Clement shaft the ground is favourable for sinking, with no change to note. At the Hammond shaft an electric pump and tank station was cut at 500 feet, and formed at bottom very hard. At the Lohse the shaft has been in dyke matter all the month, but it is likely to pass into the sandstone again very soon.—R. M.

DRIEFONTEIN CONSOLIDATED.—The Anglo-French Exploration Company (Limited), as London agents of the Driefontein Consolidated Mines (Limited), have received the following information from Johannesburg:—Report of work done on this property during the month of September: South reef, Ramsay shaft, Main east drive driven during month 4 feet, total depth 515 feet. 604 feet. South incline shaft sunk during month 42 feet, total depth 615 feet. 2nd level east drive driven during month 21 feet, total distance 41 feet. West drive driven during month 17 feet, total distance 31 feet. Crosscut south advanced during month 15 feet, total length 19 feet. Crosscut north advanced 3 feet, total length 3 feet. Main east drive driven during month 105 feet, total distance 150 feet. Main west drive driven during month 37 feet, total distance 307 feet. North reef No. 2 north incline shaft sunk during month 37 feet, total depth 493 feet. West drive driven during month 21 feet, total distance 40 feet. North reef No. 1 incline shaft, second level east drive driven during month 7 feet, total distance 7 feet. 2nd level west drive during month 3 feet, total distance 8 feet.—September 19. Average width of reef 9 inches, value 35·50 dwts. Crosscut south advanced during month 8 feet, total length 45 feet. Total footage for the month 381 feet as follows:—Shafts 73 feet, drives 277 feet, crosscuts 26 feet. The foregoing figures are taken to and inclusive of September 26. Developed during this period, south reef 6570 tons, north reef 1251 tons.—Construction. The erection of the compressor is proceeding satisfactorily. No 1 block of eight rooms for single men completed and No. 2 commenced. No. 1 north incline pumping and winding engines are nearly finished.

EAST RAND PROPRIETARY MINES.—Agnes Munro. The Anglo-French Exploration Company (Limited), as London agents for the East Rand Proprietary Mines (Limited), have received the following information from Johannesburg relative to work done during September:—North reef permanent main shaft sunk during month 42 feet, total depth 342 feet. Second level east drive driven during month 78 feet, total distance 385 feet.—September 5. Average width of reef 12 inches, value 1 dwt. Remainder of month in dyke formation. Crosscut south advanced during month 17 feet, total length 55 feet. East rise advanced during month 13 feet, total height 36 feet. West drive second level driven during month 54 feet, total distance 402 feet. West rise advanced 7 feet, total height 7 feet. West winze sunk during month 58 feet, total depth 39 feet. First level east drive driven during month 58 feet, total distance driven 377 feet.—September 5. Average width of reef 25 inches, value 293 feet as follows:—42 feet shaft. 190 feet drives, 44 feet winzes and rises, 17 feet crosscuts. The foregoing figures are taken up to and including September 26. 1121 tons have been developed during this period.—Construction. The three new boilers at No. 1 north incline are all bricked in, and all the plates dressed for engine beds. The erection of winding and pumping engines is nearing completion.

BOARD OF TRADE RETURNS.

OCTOBER TABULAR STATEMENT.

Specially compiled for "The Mining Journal" from the Board of Trade Returns.

THE Returns issued on the 7th inst. show that the Imports amounted to £35,576,896, an *increase* of £2,716,422, and that the Exports totalled £21,651,997, a *decrease* of £173,869, compared with the corresponding month of last year. For the ten months ended October 31 the Imports were £354,581,301, an *increase* of £15,174,179, and the Exports £201,091,15), an increase of £13,641,847, compared with the corresponding period of 1895. The Exports of Foreign and Colonial Merchandise show a *decrease* of £701,378 for the month, and £4,105 945 for the ten months, the totals being £4,759,24, and £40,471,302 for the one and ten months respectively.

EXPORTS:—SUMMARY OF INCREASES AND DECREASES.

Principal and Other Articles	Quantities. Increase.	Quantities. Decrease.	Values. Increase	Values. Decrease.
			£	£
Raw Materials: Coal and Patent Fuel ... Tons	—	11,812	—	39,196
Coal, &c., shipped for steamers ... Tons	99,884	—	—	—
Metals: Beams, and manufactures of ... Cwts.	323	—	5,165	—
Copper, unwrought and wrought ... ... Cwts	—	40,793	—	94,185
Earthenware and cutlery £	—	—	17,879	—
Implements and tools, and parts thereof ... £	—	—	17,862	—
Iron, unwrought and wrought Tons	76,282	—	290,137	—
Lead, pig, rolled, &c. ,,	—	1,419	—	17,865
Plate, and plated gilt wares £	—	—	8 182	—
Telegraph Wires, &c. £	—	—	122,245	—
Tin, unwrought ... Cwts.	661	—	—	1,248
Zinc or Spelter ... ,,	—	6,175	—	2,760
Other Articles ... £	—	—	33,697	—
			490,397	115,848
			115, 48	—
Total	—	—	374,549	—
Machinery: Steam engines	—	—	—	20,403
Other descriptions	—	—	66,932	—
	—	—	66,932	20,403
	—	—	20,403	—
Total	—	—	46,529	—
Alkali ... ... Cwts.	—	176,346	—	45,465
Cement ... ... Tons	1,061	—	—	101
Products of Coal ... £	—	—	23,751	—

EXPORTS:—BRITISH AND IRISH PRODUCE.

Principal and Other Articles.	Quantities. Month ended Oct. 31. 1895.	Quantities. Month ended Oct. 31. 1896.	Values. Month ended Oct. 31. 1895. £	Values. Month ended Oct. 31. 1896. £
Metals and Articles Manufactured therefrom (except Machinery):—				
Brass, and Manufactures of, not being Ordnance	9,623	9,586	37,320	42,485
Copper: Unwrought, in Ingots, Cake, or Slabs, and Precipitate:				
To Germany	13,806	6,718	34,000	19,567
,, Holland	15,651	6,461	38,633	17,772
,, Belgium	4,381	3,081	10,232	7,862
,, France	10,188	2,885	26,304	6,926
,, Italy	2,765	2,200	6,532	5,690
,, British East Indies ...	60	610	159	1,549
,, Other countries	23,537	8,751	56,726	14,738
Total	70,388	27,706	172,606	68,736
Wrought, or Manufactures, unenumerated:				
To Sweden and Norway ...	1,813	1,622	5,732	5,432
,, Germany	630	553	1,676	2,318
,, Turkey	2,384	1,922	6,733	5,580
,, Egypt	1,642	1,345	4,335	3,174
,, Brazil	2,176	1,970	6,479	6,010
,, British East Indies ...	6,832	1,161	19,541	4,285
,, Australasia	995	2,202	3,429	7,162
,, Other countries	7,660	7,706	23,436	25,034
Total	24,132	19,161	71,370	61,026
Mint or Yellow Metal: To China and Hong Kong ...	490	735	1,105	1,881
,, British East Indies ...	13 636	20,358	39,716	46,423
,, Other countries	5,835	6,435	14,635	17,123
Total	20,061	27 525	45,456	65,443
Total of Copper	114,581	74,482	289,432	195,247
Hardware and Cutlery ...	—	—	181,166	199,045
Implements and Tools, and parts thereof	—	—	115,863	118,725
Iron and Steel: Pig-iron: To Russia	Tons. 9,432	Tons. 7,661	£ 23,583	£ 27,125
,, Sweden and Norway ...	9,527	7,341	21,388	17,3 1
,, Denmark	4,769	1,729	9,151	3,553
,, Germany	23,725	44,403	57,727	92,935
,, Holland	9,280	20,596	21,786	48,346
,, Belgium	2,556	10,782	6,244	21,620
,, France	1,211	3,846	3,012	8,223
,, Portugal, Azores, & Madeira	1,746	710	3,121	1,492
,, Spain and Canaries ...	180	6 6	427	2,818
,, Italy	5,942	6,152	12,212	14,464
,, United States	6,591	9 7	39,537	5,986
,, Australasia	1,394	3,287	3,861	8,216
,, British North America ...	2,680	1,577	8,219	4,474
,, Other countries	5,277	13,153	12,576	29,003
Total	87,630	122,839	220,554	291,246
Bar, angle, bolt, and rod ...	15,102	16,724	83,751	10 ,873
Railroad of all sorts	30,951	58,434	131,519	270,467
Wire, iron and steel &c. ...	4,035	6,383	24,085	95,016
Steel, plates, boiler plates, &c.	10,630	11,223	70,786	77,864
Galvanised sheets	18,918	19,558	115,998	131,646
Cast and wrought iron, &c. ...	28,983	35,577	378,047	463,022
Old, for re-manufacture ...	9,387	11,593	26,049	31,669
Steel, unwrought	21,984	22,682	205,935	248,362
Black plate for tinning ...	4,267	4,978	41,824	47,744
Manufactures of steel, or of iron and steel combined ...	2,197	2,123	72,956	59,038
Total of Iron and Steel (including tin plates and sheets)...	168,333	344,615	1,910,208	2,200,345
Tin Plates and Sheets: To Russia	2,237	3,810	27,135	42,967
,, Germany	241	1,127	4,322	13,092
,, Holland	257	601	3,918	8,019
,, France	519	1,120	6,396	13,445
,, Portugal, Azores, and Madeira	877	191	10,492	2,047
,, Italy	293	186	3,339	1,915
,, Roumania	283	198	3,239	2,117
,, United States	19,805	10,599	225,626	116,764
,, Brazil	345	514	3,978	5,850
,, Argentine Republic ...	285	336	4,290	3,5 8
,, British East Indies ...	1,244	451	14,061	4,894
,, Australasia	2,094	1,184	24,479	10,954
,, British North America ...	3,279	1,706	37,697	18,581
,, Other Countries	2,177	3,210	24,972	37,078
Total	34,179	25,201	393,934	282,958
Lead: Pig Sheet, Piping, and Manufactures; To Russia	Tons. 1,599	Tons. 925	£ 20,387	£ 11,402
,, Germany	100	76	1,117	925
,, China and Hong Kong ...	112	30	1,210	354
,, Japan	99	10	1,374	297
,, United States	452	9	5,116	152
,, British East Indies ...	538	478	6,187	6,794
,, Australasia	55	75	727	1,273
,, British North America ...	466	222	5,184	2,793
,, Other countries	807	907	9,816	11,461
Total	4,227	2,9 3	53,103	35,453

BRITISH AND IRISH PRODUCE—*Continued.*

Principal and Other Articles	Quantities. Month ended Oct. 31.		Values. Month ended Oct. 31	
Plate & Plated & Gilt Wares	—	—	40,0.6	48,238
Telegraphic Wires, & apparatus connected therewith ...	—	—	39,763	165,054
Tin, Unwrought:	Cwts.	Cwts.	£	£
To Russia	2,532	2,954	8,599	9,459
,, Sweden and Norway ...	883	1,130	3,014	3,467
,, Germany	930	576	2,135	1,744
,, France	1,094	310	3,705	954
,, Turkey	374	610	1,305	1,920
,, United States	—	—	—	—
,, British North America ...	1,251	579	4,491	1,961
,, Other countries ...	3,165	5,128	13,416	17,012
Total	10,599	11,567	37,665	35,417
Zinc or Spelter: Unwrought and Wrought	18,449	12, 71	12,016	9,256
Total of Principal Articles ...	—	—	2,716,803	3,057,26)
,, other Articles	—	—	47,980	51,867
Total of Metals and Articles Manufactured therefrom (except Machinery)	—	—	2,764,533	3,109,132
	Tons.	Tons.		
Alkali	624,089	417,743	159,314	113,849
Cement	31,531	32,591	53,218	52,117
Products of coal (including paraffin, petroleum, &c.) ...	—	—	126,671	150,422

MACHINERY.

Mining: (Not Steam Engines.)	Oct., 1895	Oct., 1896	10 mos. 95	10 mos. 96
To Countries in Europe ...	£ 4,829	£ 2,617	£18,74:	£26,067
,, United States	77	10	3,585	1,199
,, Countries in South America	4,926	7,878	22,8:6	41,410
,, British Possessions in S. Africa	61,977	83,460	395,755	490,7o8
,, ,, East Indies	4,722	10,435	35,657	53,712
,, Australasia	4,781	12,116	55,552	218, 6)
,, Other Countries	4,532	6,394	40,403	49,7o4
Total	85,553	92,940	572,893	880,940
Total of Machinery other than Steam Engines	1,291,108	1,358,040	10,286,061	11,184,253
Total of Steam Engines ..	300,071	2.0,481	2,181,337	2,727,892
Total of Machinery and Mill Work	£1,591,979	£1,633,503	£12,567,338	£14,112,145

EXPORTS OF FOREIGN AND COLONIAL MERCHANDISE.

Principal Articles.	Quantities. Month ended Oct. 31 1895.	Quantities. Month ended Oct. 31 1896.	Values. Month ended Oct. 31 1895.	Values. Month ended Oct. 31 1896.
Copper: Unwrought and part wrought	Tons. 1,613	Tons. 121	£ 48,048	£ 30,616
Iron and Steel: Bar, angle, bolt, and rod ...	3,537	1,551	25,417	11,514
Steel, unwrought	868	181	7,149	1,938
Manufactures: Girders, beams, and pillars ...	53	287	416	1.813
Unenumerated ... Cwts.	70,314	86,775	42,912	49,653
Petroleum	Gals. 139,300	Gals. 127,4.0	5,075	3,877
Quicksilver	Lbs. 165,692	Lbs. 190,662	15,341	16,327
Saltpetre	Cwts. 962	Cwts. 2,183	948	2,232
Tin, in blocks, ingots, bars, or slabs	35,311	49,052	115,168	145,138

IMPORTS.

SUMMARY OF INCREASES AND DECREASES.

Principal and Other Articles.	Quantities. Increase.	Quantities. Decrease.	Values. Increase.	Values. Decrease.
Metals:			£	£
Copper: Ore ... Tons	—	1,608	—	12,632
Regulus ... ,,	—	419	—	4,575
Unwrought and part wrought	2,893	—	127,703	—
Iron: Ore ... ... ,,	—	25,572	—	12,743
Bar ... ... ,,	—	1,491	—	10,776
Steel, unwrought ,,	—	343	24	—
Lead: Pig and sheet ... ,,	—	1,009	—	13,010
Pyrites of iron or copper ,,	—	2,683	—	2,159
Quicksilver ... Lbs.	—	33,662	—	2,655
Silver Ore ... ... ,,	—	—	41	—
Tin, in blocks, &c. ... Cwts.	1,104	—	—	18,685
Zinc, crude ... ... Tons	1,546	—	21,689	—
Other Articles	—	—	—	19,322
			157,456	96,557
			96,557	—
Total	—	—	60,899	—
Chemicals: Alkali ... ... Cwts	—	1,613	—	646
Brimstone ... ... ,,	—	10,833	—	2,136
Saltpetre ... ... ,,	—	1,619	—	4,077
Iron Manufactures: Beams, girders, &c. ... Tons	13	—	—	634
Unenumerated ... Cwts	—	15,337	56,833	—
Zinc Manufactures ... ,,	9,412	—	11,295	—

FOREIGN AND COLONIAL PRODUCE.

Principal and Other Articles.	Quantities. Month ended Oct. 31 1895.	Quantities. Month ended Oct. 31 1896.	Values. Month ended Oct. 31 1895.	Values. Month ended Oct. 31 1896.
Copper:	Tons.	Tons.	£	£
Ore:—From Spain	3,3:5	1,020	10,6 1	12,534
,, Italy	—	350	—	1,750
,, United States ..	74	24	2,137	720
,, Venezuela	—	—	—	—
,, Chili	492	788	3,562	6,521
,, Cape	1,52:	—	15,200	—
,, British N. America	4 180	7,8.0	12,840	12,507
,, Other countries ..	2,238	297	8,8 7	5,043
Total	11,197	10,219	53,007	40,375
Regulus and Precipitate: From Portugal	850	883	25 500	24,800
,, Spain	4,7.6	4,834	129,37:	113 614
,, United States ..	1,013	2 004	22,916	59,184
,, Chili	—	194	—	4,938
,, Other countries ...	2,061	350	38,508	9,544
Total	8,690	8,271	216,355	211,780
Unwrought and part Wrought: From United States ..	706	3,371	34,785	162,219
,, Chili	1,318	131	63,1 8	23,932
,, Australasia ..	579	681	28,384	32,954
,, Other countries ..	314	9 6	14,598	42,673
Total	2,977	5,572	141,075	268 778
Iron and Steel: Iron ore { From Spain .. / Other countries ..	363,841 / 44,284	346,447 / 35,106	230,814 / 45,735	229,015 / 34,832
Total	408,125	381,553	276,549	263,847
Iron, bar, angle, bolt, and rod	7,472	6,981	59 958	49,182
Steel, unwrought	2,056	1,713	15,868	15,892
Lead, pig and sheet	14,5:1	13,522	157,659	144 649
Pyrites of iron or copper sulphur	40,559	38,276	65,9:0	63,761
	Lbs.	Lbs.		
Quicksilver	42,040	9,218	3,577	922
Silver Ore	—	—	115,146	115,186
Tin, in blocks, ingots, bars, or slabs:	Cwts.	Cwts.		
From Straits Settlements ...	58,050	63,991	186,455	186,980
,, Australasia	8,658	8,420	23,548	23,870
,, Other countries ..	7,735	3,837	23,819	11,287
Total	74,443	75,547	243,822	222,137
Zinc, crude in cakes ... Tons	6,751	8,297	103,178	132,867
Total of principal articles ...	—	—	1,449,145	1,529,366
,, other articles	—	—	198,819	179,497
Total of metals	—	—	1,647,964	1,708,863

RAND OUTPUT FOR OCTOBER.

THE gold crushings at Witwatersrand, according to a cable received by the Union Steamship Company, for the month of October were 199,890 ounces. This shows a *decrease* of 2672 ounces, as compared with the previous month's total, and an *increase* of 7238 ounces, as compared with the corresponding month of last year. The falling off this month is attributed to want of water. The following table gives crushings from the beginning of 1891 to date:—

	1891	1892	1893	1894	1895	1896
	Ozs. dwt	Ozs. dwt.	Ozs.	Ozs.	Ozs.	Ozs.
January ..	5 ,205 15	84,560 8	103,374	149,814	177,483	118,178
February ..	50,079 2	86,849 8	93,252	151,870	169,295	167,018
March	52,949 1	93,244 11	110,474	165,372	184,945	173,9:2
April	55,871 16	95,562 6	122,053	168,745	186,323	174,518
May	54,673 1	99,426 6	116,911	169,773	194,581	195,008
June.....	56,868 1	01,252 3	122,907	168,162	200,941	193,640
July.....	54,924 10	110,279 1	126,169	167,953	199,453	203,873
August ..	59,070 4	104,322 3	136 069	174,977	203,573	212,428
September	65,101 5½	107,851 13	129,585	176,707	194,764	202,562
October ..	72,793 8	114,167 8	138,599	173,378	192,632	199,890
November	73,393 15	105,794 15	138,640	175,304	195,218	—
December	80,312 11	170,748 17	148,357	182,101	178,428	—
	729,237 2½	1,130,863)	1,478,473	2,024,159	2,277,635	1,871,062

CONSOLIDATED GOLD MINES OF WESTERN AUSTRALIA (LIMITED).

The following circular has been sent out to the shareholders:—Coongan Mines: After several unexpected delays the crushings have commenced at the Coongan Mine, and the last six crushings gave a return of 515 ounces for 508 tons crushed. The value of this gold is about £3 17s. 6d. per ounce. It will be remembered that Mr. Brenton Symons and the manager of the Coongan Mine both estimated that the return would be 15 dwts. per ton, which would give a good profit, The returns are, therefore, in excess of these estimates.—Star of the North Mine: The directors have recently received a report, stating that rich ore had been struck on this property, and the manager estimates that this mine will be worth about 2 ounces per ton, and the directors are considering the question of erection of machinery in accordance with the manager's recommendation. Mr. Walter Marsh, the company's late manager, is at present on his way to this country, and on his arrival the directors will obtain his views on these and other matters.—Toweranna: The erection of machinery is being actively proceeded with on these properties, and it is expected that crushing will commence in about six weeks. The latest reports received from these properties are most encouraging.

THE OURO PRETO GOLD MINES OF BRAZIL (LIMITED) has sold the September gold for £5501 16s. 3d.

EXPLORING AND GOLD MINING ASSOCIATION (LIMITED).

The ordinary general meeting was held on Tuesday, at Dashwood House, Mr. R. C. Richards in the chair.—Some objection was raised as to the form in which the balance-sheet was submitted to the meeting, as not being in accordance with the Articles of Association, and, after a lengthy discussion, the meeting was adjourned for a fortnight.—An extraordinary meeting was afterwards held to consider resolutions for reconstruction, but the resolutions did not meet with the support of the requisite majority of the shareholders, and the Chairman declared them not carried.

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GOLD MINING IN ONTARIO.

(FROM OUR OWN CORRESPONDENT.)

I VENTURED an opinion a short time ago that there would be a gold mining "boom" in Ontario, my opinion being based on the splendid results of recent developments at the various mines. If, however, the "boom" is to be similar to the present stockjobbing craze in British Columbia, where nine out of every ten of the so-called investments are "wild cat," it would be better for Ontario, and Canadians generally, if the "boom" does not arrive.

I have already remarked that Canadians are becoming interested in the mineral resources of their country, and are prepared to invest the necessary capital for their proper development, but if their confidence is at all shaken by any "wild cat" scheme they will seek other fields for investing their capital. Many Canadians have, no doubt, bought largely of stocks in Rossland mines, the greater number of which will never pay a cent in dividends. "Once bitten, twice shy," does not apply to mining ventures, because if a shareholder is bitten once he is disposed to be "for ever" shy, the consequence being that a great and legitimate industry, in which investment is as safe as any other, providing, of course, there be prudent and experienced management, judicious capitalisation, is seriously retarded.

Now that the attention of mining men is turned towards Ontario, scarcely a day passes but some new rich gold mining district is discovered. The region between Little Turtle River and Bad Vermillion Lake is one of the latest, the country having lately been scoured by prospectors, and almost all the land in sight surveyed into locations. Probably this is due to the fact that extremely rich finds were made on the Foley, Ferguson, and Lucky Coon properties, all of which are being worked, and a description of which I will give at a later date. It is not to be inferred that all these locations are valuable, but some of those I visited are very promising, and from the surface outcroppings should yield very rich ore as depth is attained. Many of the veins average from 2 to 4 feet on the surface, in some of which I discovered traces of free gold, and would probably average from $20 to $35 to the ton. The ore throughout this district varies considerably in different veins at a little distance apart. Some of the ore is white quartz, with only a small quantity of sulphides visible, but, generally speaking, they all contained free gold, the ore being almost entirely free milling. At another point close by, where a shaft had been sunk about 35 feet, the ore was refractory, and contained iron and copper pyrites and zinc blende. Active preparations are being made on those properties which are far enough advanced to warrant the working of the same, to work throughout the winter. The cost of transportation is much less in winter than in summer, and the facilities for handling machinery are better.

The free milling ores of Ontario will pay better than those of any other country in the world on the average. There is an abundance of such free milling ore in Ontario, which can be treated for about one-tenth of the cost of smelting ores such as are found in British Columbia, with the additional advantage of being in close proximity to supplies and cheaper labour. It will be clearly understood that the $20 ore of the Lake of the Woods will give better returns as an investment than a $40 ore of the west. The investing public are naturally desirous of placing their money where they can get the most ready returns. They can mine, mill, and produce bullion from free milling ore inside of one week, while it will take about four months, under the most favourable circumstances, to treat the argentiferous ores of the west; hence the returns must necessarily be much slower. With regard to British Columbian ores, on the other hand, the extraction of gold from the ores requires large and costly plants, as well as service of skill of high order, and there are few mines anywhere which can support a plant of their own. The ore must be rich indeed to stand all the charges and leave a margin for profit when the product is brought down to bullion.

The Mikado Mine at Rat Portage recently made an extraordinary run, which will give the mines of this locality a prominence hardly eclipsed by that which the mines of Trail Creek (B.C.) have attained. Three bricks of gold were lodged in the Imperial Bank here some days ago, containing 417 ounces of gold, the value of which was $7000. This was obtained from 114 tons of ore, the value per ton being about $66. This does not include concentrates. Another run on the same ore gave even better results, 25 tons having produced bullion to the amount of $2520 in all, over $100 to the ton free milling, still leaving a third of the gold to be treated in the concentrates, and bringing the average for the 25 tons up to the splendid figure of $150 per ton. With such splendid results, it is not surprising that Ontario is beginning to attract the attention of mining men from all parts. From enquiries I have made I have every reason to believe that the ore from which the above results were obtained is entirely representative of the mine as a whole, and not picked ore. The property, I hear, is owned by a South African Company, of London, England, and they have every reason to be pleased with it.

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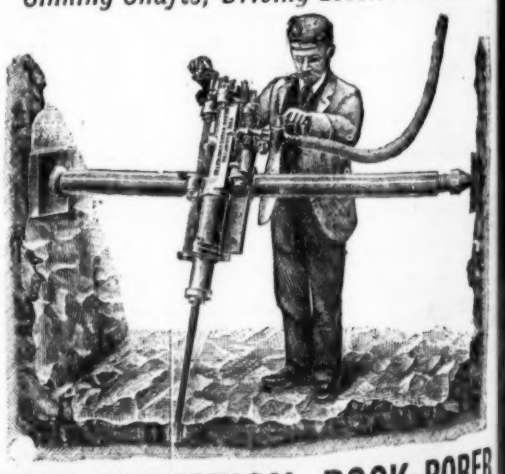

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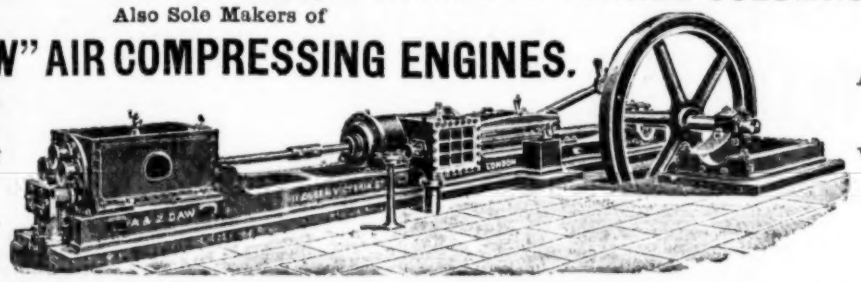

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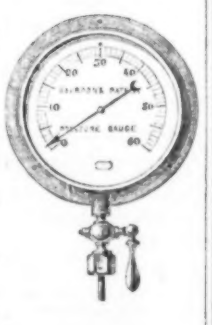

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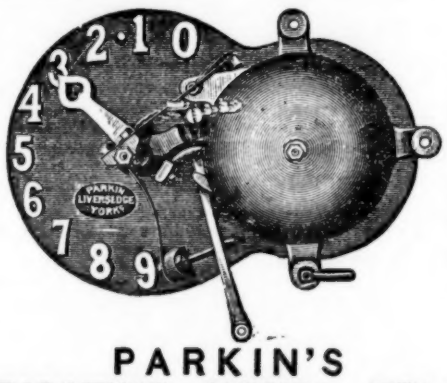

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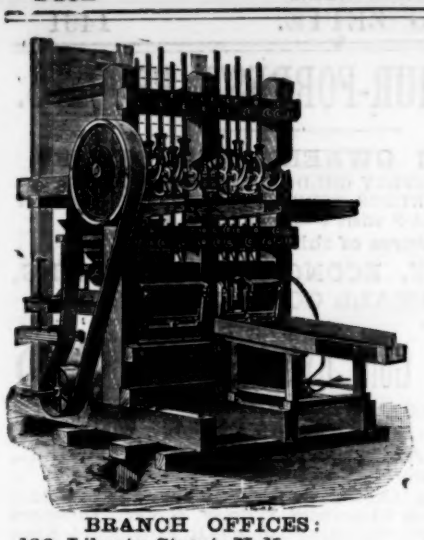

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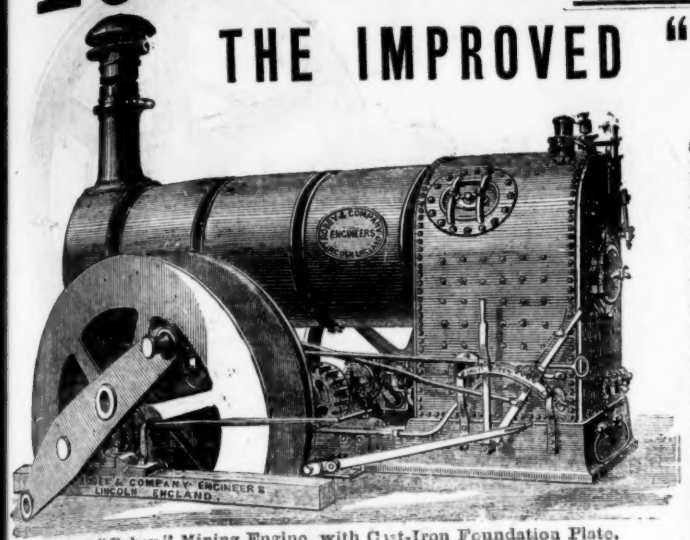

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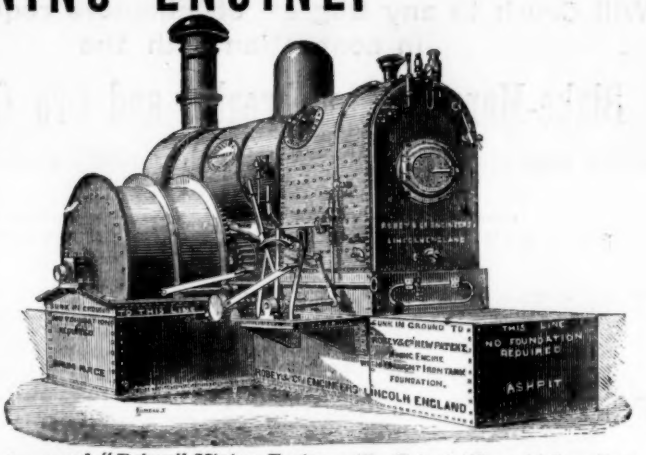

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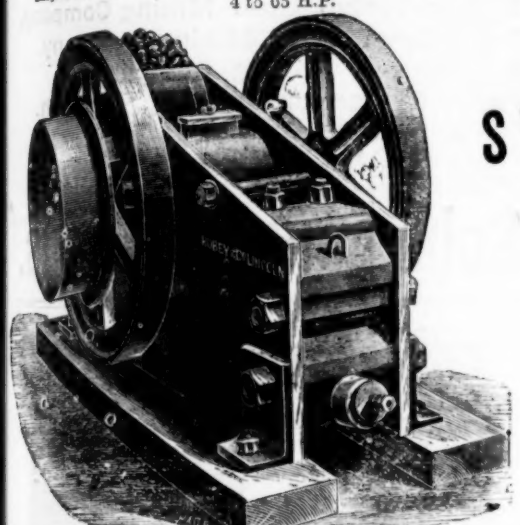

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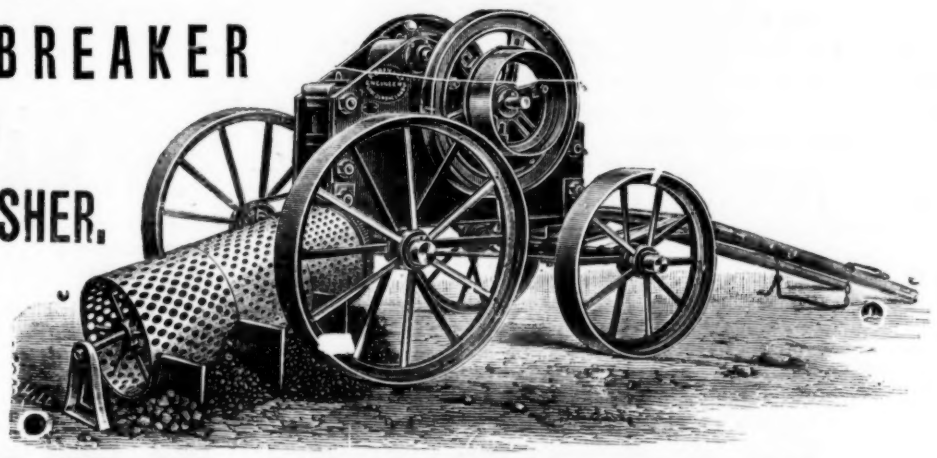

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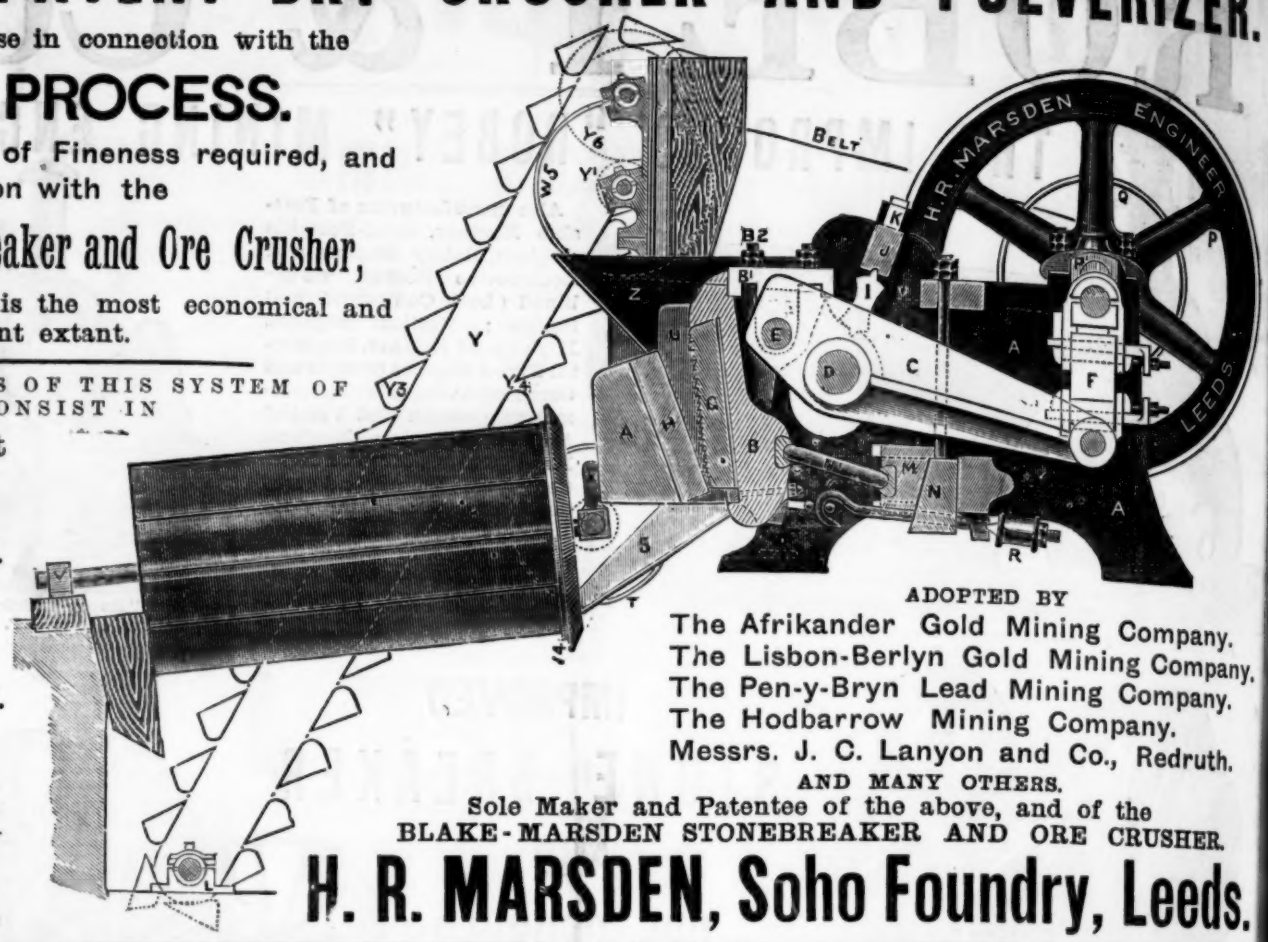

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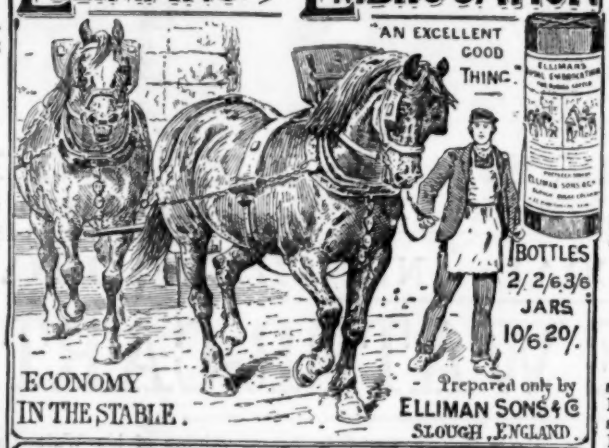
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